ABSTRACT

Title of Thesis: AN EMPIRICAL TEST OF A MOTIVATIONAL MODEL OF "SIDELINE RAGE" AND AGGRESSION IN PARENTS OF YOUTH SOCCER PLAYERS

Jay D. Goldstein, Master of Arts, 2005

Thesis directed by: Dr. Seppo E. Iso-Ahola, Professor
Department of Kinesiology

Research on sports-related spectator aggression has concentrated on professional and collegiate sports environments, ignoring the realm of youth sports. The present research extended and expanded a motivational model of anger and aggression, derived from the foundations of self-determination theory. It was hypothesized that parents higher in controlled orientation were predicted to experience more ego-defensiveness and feel more pressure, thus report higher levels of sport parental anger and aggression. Conversely, autonomy-oriented parents were predicted to experience less ego-defensiveness and feel less pressure, thus report lower levels of sport parent anger and aggression. Participants were 340 parents of youth soccer players (boys and girls ages 8-16). Before their child's game, parents completed the General Causality Orientations Scale. Afterwards, parents completed the self-report behavior record. More than half of the participants reported experiencing anger, and responding with varying levels of aggression. Results provided strong support for the motivational framework and the hypotheses.

AN EMPIRICAL TEST OF A MOTIVATIONAL MODEL OF "SIDELINE RAGE" AND AGGRESSION IN THE PARENTS OF YOUTH SOCCER PLAYERS

By

Jay D. Goldstein

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Advisory Committee

Professor Seppo Iso-Ahola, Chair
Professor Elizabeth Brown
Professor Bradley Hatfield

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ABBREVIATIONS

1.	Self Determination Theory	SDT
2.	General Causality Orientation Scale	GCOS
3.	Sport Parent Motivation	SPM
4.	Sport Parent Motivation - Control	SPM-C
5.	Sport Parent Motivation - Autonomy	SPM-A
6.	Perceived Pressure	PP
7.	Ego Defensiveness	ED
8.	Sport Parent Anger	SPA
9.	Sport Parent Aggression	SA
10.	Subjective Response to Aggression	SRA
11.	Aggressive Actions	AA

CHAPTER 1

INTRODUCTION

As American society has evolved in the last forty years, the mass media has become a more influential factor in shaping one's perspective of the world. One of the interesting partnerships that coalesced during this period has been that of sports and television. In doing so, the world of sports has become a tremendous business, as well as a source of regional, national, and international entertainment. As society has placed a greater value on sports, youth participation has increased. Today, more than 26 million children (ages six to sixteen) participate in organized sports activities. Unfortunately, most of these activities are organized, managed, and implemented by adult volunteers with little or no formal educational training (Murphy, 1999)

While most parents are cognizant that a child's enjoyment should be the most important factor in an activity, more and more emphasis has been placed on the competitive nature of these sports activities, especially as children move from the end of early childhood into early adolescence. Some parents have transferred the "professional sports model" of "winning is everything" into the realm of their children's games, instead of adopting a developmental perspective. One adjunct of this phenomenon is an increase in negative parental behaviors at children's sporting events. Such behaviors have resulted in verbal abuse, physical assaults and melees.

An example of this occurred in the spring of 2001, as the father of a Little League player in Palm Beach, Florida was sentenced to three years in prison for pointing a gun at a coach. In 1999, high school softball coach, Maureen Doyle, wound up in court after a verbally abusive father threatened to kill her during a phone call (Gehring, 2001). In

January 2000, New York father Matt Picca was accused of beating up his son's hockey coach after a verbal argument. Similarly, in February of that same year, a soccer coach in Florida was charged with battery for head butting a referee. Furthermore, in one of the most extreme incidents of youth sports-related spectator violence (or what the media have termed "sideline rage"), Michael Costin died after a fight with fellow hockey parent, Thomas Junta, following a pick-up game their sons were playing in Reading, Massachusetts (ABC News, 2000).

Sports-related spectator aggression dates back to the crowds witnessing the gladiators at the Roman Coliseum and spans to present day "soccer hooliganism" (Guttmann, 1983). Previous efforts to identify predictors of spectator aggression and violence have examined both situational and personality explanations, but have not been explained fully in theoretical terms. Borrowing from Aristotle and Freud, Brill (1929) extolled the benefits of the cathartic experience for (male) spectators. However, while Kingsmore (1970) found support for this perspective for fans viewing basketball and professional wrestling, numerous studies demonstrated that fans became angrier following the event (Goldstein & Arms, 1971; Leuck, Krahenbuhl, & Odenkirk, 1979; Sloan, 1979; Turner, 1970).

By the very nature of competitive sport, in that someone must inevitably lose, the frustration-aggression link (Dollard, Doob, Miller, Mowrer, & Sears, 1939) suggests a causal link between fans rooting for the team that lost the contest and aggression (Berkowitz, 1969; Sloan, 1979). However, studies that are more recent suggest that this may be due to negative affect and anger (Berkowitz, 1993). Other situational factors associated with sports-related spectator aggression include the type of sporting event

(Arms, Russell, & Sandilands, 1979; Goldstein & Arms, 1971), outcome (Harrell, 1981), and presence of aggressive cues (Berkowitz, 1963, 1964, 1970; Berkowitz & Alioto, 1973; Russell, 1983; Smith, 1972; Wheeler & Caggiula, 1966).

Furthermore, social learning theory (Bandura, 1973) postulates that the overall weakening in strength of inhibitions against the expression of aggression, as a result of "modeling effects," will result in a general increase in spectator hostility. Even though the Goldstein & Arms (1971) field experiment at the annual Army-Navy game failed to negate support for the frustration-aggression perspective, the results suggest that the disinhibitory model lends more credence to the underlying dynamics of increased hostility in that particular setting.

Personality explanations of sports-related spectator affect have tended to endorse a state-trait approach when explaining arousal and aggression. By tracking spectators' levels of aggression and arousal at various elapsed time segments during several hockey games, Russell (1981) identified a curvilinear pattern (an inverted U-curve). Russell's research indicated that this pattern was centered on incidents of player violence. It should be noted that "the immediate effects of witnessing sports aggression are likely to be understated, especially where interpersonal aggression occurs early in a contest" (Russell, 1983, p. 167).

Other factors associated with sports-related spectator aggression include mood states (Mehrabian, 1976), quality of interpersonal relationships (Arms, et al., 1979), enjoyment (Zillmann, Bryant, & Sapolsky, 1979), tolerance for aggressive behaviors (Smith, 1972). For example, spectators who have a higher tolerance for aggressive behaviors (i.e., frequently attended hockey games) demonstrated an increase in verbal

hostility, while spectators who were intolerant of fighting showed a decrease in verbal hostility (Harrell, 1981). Although Russell & Baenninger (1996) found that highly identified fans for a particular team were more willing to commit instrumental acts of aggression, further research demonstrated that this was only true when the target was a player or coach of a rival team (Wann, Peterson, Cothran, & Dykes, 1999).

Furthermore, most research within this context has largely concentrated on professional and collegiate sports environments, ignoring the realm of youth sports. The fact that sports-related spectator aggression has transgressed into the everyday lives of our children necessitates closer examination.

STATEMENT OF PROBLEM

The present research was designed to propose and test a theoretical framework that integrates and extends previous research on anger and aggression, to further our understanding of "sideline rage" at youth sporting events. The motivational framework was derived from the foundations of self-determination theory and incorporated global and situation specific motivations. The basis of this study was the extension and expansion of a theoretically valid model from a different, but analogous, domain ("road rage" and aggressive driving) to the context of youth sports spectatorship. In doing so, the results of this research will provide some insight as to what caused the disinhibition of emotional self-regulation in some parents, who became so enraged that they become verbally belligerent – or worse, physically abusive. In the realm of youth sports administrators, these people have been commonly referred to as "T.H.O.S.E." parents (in

this case, the acronym stands for Tempestuous, Harried, Overwrought, Self-Absorbed, and Emotional).

Specific survey questions were designed to identify the trait motivation orientations, as well as descriptive demographic variables. Self-report behavior records were designed to identify situational motivation, anger, and aggressive behaviors. Thus, the central research question is: Do trait motivational orientations of parents affect their motivation in specific situations at their children's sports events, which in turn predict sports parent anger and subsequent aggression?

The results of this research will increase our understanding of the possible reasons why some spectators become one of "T.H.O.S.E." parents while watching their children play in sporting events. More importantly, the findings create the foundations of a cognitive-behavioral intervention designed to make the youth sports environment more enjoyable for the participants and their families.

RESEARCH HYPOTHESES:

It is hypothesized that:

1) Sport parent motivation has both direct and indirect effects on sport parent anger.

2) The indirect effects of sport parent motivation are such that control-oriented parents will become more ego-defensive and feel more pressure, thus report higher levels of sport parental anger. Conversely, autonomy-oriented parents will become less ego-defensive and feel less situational pressure, thus report lower levels of sport parent anger.

3) Sport parent motivation will have indirect effects on sport parent aggression, as measured by level of aggressive actions and by subjective response to aggression. These

indirect effects are mediated by situational motivation (perceptions of pressure and ego-defensiveness), and, subsequently, sport parent anger.

ASSUMPTIONS

The assumptions of this study were:

1) The subjects in the study have sufficient understanding of the directions of survey and for completion of the self-report record to accurately complete them.

DELIMITATIONS

The delimitation of this study were:

1) The subjects for this study were from a metropolitan area on the east coast and from a single sport - soccer. Therefore, the results are limited to the parents of youth soccer players.

LIMITATIONS

The delimitation of this study were:

1) The sport parent behavior record procedures entail that perceived pressure, ego-defensiveness, sports parent anger, aggressiveness, and target of aggressiveness were all measured via self-report.

2) The use of observational techniques, such as P.O.I.S.E. (POISE, Kidmann, McKenzie & McKenzie, 1999), are higher in validity and reliability than self-report measurements. However, time, personnel and economic constraints did not permit observational procedures in the present investigation.

3) The self-reports of anger and responses to anger were recorded at the same time. This possibly may have resulted in inflated correlations among them.

CHAPTER 2

REVIEW OF RELATED LITERATURE

The following chapter presents a brief review of literature relating to and supporting this research project. Using the framework of the self-determination theory, this review will examine the relationship between the trait motivation orientation and parents' motivations in specific situations at their children's' sports events, which in turn predict sports parent anger and subsequent aggression. The literature review is divided into the following sections: a) Self-determination theory; b) Motivational orientations; c) Situational motivation; d) Pressure, e) Ego Defensiveness, and f) Anger

Self-Determination

The foundations of self-determination theory (SDT; Deci & Ryan, 1985b, 1987, 1991) are based on the interaction between active, integrating human agents and "social contexts that either nurture or impede the organism's active nature" (Deci & Ryan, 2002, p. 6). Social environments can be beneficial by promoting growth and integration, or they can disrupt, stall, or splinter these processes resulting in maladaptive behaviors and experiences. This is the basis for SDT's predictions about behavior, experience, and development.

The theory presupposes three "innate, universal and essential" needs -- the needs for competence, relatedness, and autonomy – provide the basis for "categorizing aspects of the environment as supportive versus antagonistic to integrated and vital human functioning" (Deci & Ryan, 2002, p. 6). Competence refers to feeling effective in one's ongoing interactions with the social environment and experiencing opportunities to

exercise and express one's capacities (Deci, 1975; Harter, 1983; White, 1959). Relatedness refers to feeling connected to other people, caring for and being cared for by other people, having a sense of belonging to other people and the community (Baumeister & Leary, 1995; Bowlby, 1979; Harlow, 1958; Ryan, 1995). Autonomy refers to the perception that one's own behaviors are initiated of one's own volition. Even when one's actions are influenced by outside sources, individuals experience their behavior as an expression of themselves (Deci & Ryan 1985b; Ryan & Connell, 1989). It should be noted that the stringent classification of these needs as being essential for one's well-being is quite different from the broader perspective of personal motives and desires. Even when "people are highly efficacious at satisfying motives, the motives may be detrimental to one's well-being if they interfere with people's autonomy or relatedness" (Deci & Ryan, 2002, p. 8).

SDT, comprised of four mini-theories, has evolved over the last thirty years. Cognitive evaluation theory (CET; Deci, 1975; Deci & Ryan, 1980) describes social contexts as autonomy supportive (informational), controlling, and amotivating, and links them to the different motivations. Organismic integration theory (OIT; Deci & Ryan, 1985b; Ryan & Connell, 1989) was derived to "explain the development and dynamics of extrinsic motivation, the degree to which individuals experience autonomy while engaging in extrinsically motivated behaviors" (Deci & Ryan, 2002, p. 9), and the processes through which people assimilate the values and beliefs of their community and culture. Causality orientations theory (COT; Deci & Ryan, 1985a) describes differences in people's tendencies to "orient toward the social environment in ways that support their own autonomy, control their behavior, or are amotivating" (Deci & Ryan, 2002, p. 10),

allowing for predictions of experience and behavior from these enduring orientations. Finally, basic needs theory (BNT: Ryan & Deci, 2000b) was created to explain the relation of motivation and goals to health and well-being across time, gender, situations, and culture.

In summary, SDT has furthered our understanding of behaviors in many domains including education and achievement (Grolnick & Ryan, 1987, 1989; Grolnick, Ryan, & Deci, 1991; Ryan & Connell, 1989), medical training (Williams & Deci, 1996, 1998), work (Deci, Connell, & Ryan, 1989), and romantic relationships (Hodgins, Koestner, & Duncan, 1996; Knee, Patrick, Vietor, Nanayakkara, & Neighbors, 2000). "With its emphasis on self-regulation and emotional integration, SDT also provides a theoretical context" (Knee, Neighbors, & Vietor, 2001, p. 890) for why some parents might be more prone to experience anger while watching their children's sports events, and be more likely to display aggressive behaviors.

Motivational Orientations

Causality orientations theory (COT; Deci & Ryan, 1985a) was developed to describe the relatively stable individual differences in one's motivational orientations toward the social world. The theory is intended to index aspects of one's personality that are "broadly integral to the regulation of behavior and experience" (Deci & Ryan, 2002, p. 21). People are assumed to have, to some degree, each of the three orientations – autonomous, controlled, and impersonal. The autonomy orientation involves regulating behavior based on interests and self-endorsed values; "it serves to index a person's general tendencies toward intrinsic motivation and well-integrated extrinsic motivation"

(Deci & Ryan, 2002, p. 21). Autonomy orientation is positively correlated with self-actualization, self-esteem, ego development, and is negatively correlated with self-derogation and hostility (Deci & Ryan, 1985a). The control orientation involves orienting toward controls and directives concerning how one should behave;" it relates to external and introjected regulation" (Deci & Ryan, 2002, p. 21). Controlled orientation is positively correlated with feelings of stress and tension (Ryan, 1982; Ryan, Mims, & Koestner, 1983), public self-consciousness, Type-A coronary prone behavior pattern, and is associated the adoption of a pressured, ego-involved stance toward achievement tasks (Deci & Ryan, 1985b; Ryan, Koestner, & Deci, 1991). More recent research has demonstrated that controlled orientations are positively associated with self-serving attributional tendencies (Knee & Zuckerman, 1996), self-handicapping tendencies and more defensive coping strategies in response stressful events (Knee & Zuckerman, 1998), more defensive interpersonal functioning (Hodgins, Koestner, & Duncan, 1996), and driving anger and aggressive driving (Knee, Neighbors, & Vietor, 2001; Neighbors, Vietor, & Knee, 2002). The impersonal orientation involves orienting towards ineffectualness and not behaving intentionally; "it relates to amotivation and lack of intentional action" (Deci & Ryan, 2002, p. 21). The impersonal orientation is positively correlated with higher levels of social anxiety, depression, low self-esteem, and self-derogation (Deci & Ryan, 1985).

The empirical evidence lends credence to the concept that autonomously oriented people show less cognitive defensiveness than control-oriented individuals. Hence, it is plausible that "autonomous functioning should be associated with lower emotional defensiveness, including denial (Knee & Zuckerman, 1998), criticism of others (Hodgins,

Koestner, & Duncan, 1996), justification of one's own behavior (Knee & Zuckerman, 1998), and avoidance of emotion" Hodgins & Knee, 2002, p. 89).

According to Deci and Ryan (1991), emotions can lead automatically to behaviors, or can, depending on one's motivational orientation, be mediated by intentional processes. Furthermore, regulating one's emotions autonomously involves learning to cognitively interpret stimuli in more integrated ways (Deci & Ryan, 1991). Although autonomous self-regulation will not necessarily protect individuals from experiencing sadness, anger, or fear, the autonomously functioning individual should have higher thresholds for experiencing threat (to the extent that anger or fear arise as a response to an ego-invested aspect of the self to a perceived threat). Hence, autonomously oriented individuals may respond less readily or with less intensity as compared to control oriented individuals (Hodgins & Knee, 2002).

In a different context than youth sports, Knee, Neighbors, & Vietor (2001) examined driving anger and aggressive driving behaviors as a function of motivational orientations. It was hypothesized that reactivity in emotion and behavior would be considered symptoms of a non-integrated, ego-invested, and defensive self (i.e., control oriented). Results indicated that: 1) control orientation was associated with more driving anger as a result of other drivers' actions; 2) control orientation was associated with more aggressive driving behaviors and more traffic citations; 3) the relation between control orientation and aggressive driving was mediated by driving anger; and 4) self-esteem and social anxiety did not account for the results of motivational orientations.

The aforementioned empirical evidence demonstrated that a less integrating, more controlled "self" was linked to experiencing more reactive emotion, which in turn was

linked to reactive behavior (Hodgins & Knee, 2002). Within the context of the youth sports environment, it would seem that when the emotional experience of becoming mad or angry at referees, opposing players, or opposing parents, control-oriented parents might be more likely to respond with yelling, obscene language, making gestures, or jumping out of their seat than autonomy-oriented parents. Therefore, for the purposes of this paper, the focus will be the differences between autonomously oriented individuals and control-oriented individuals.

Situational Motivation

Vallerand (1997) proposed a hierarchical model of motivation that argued for the need to concurrently examine motivation at the global (or personality/ trait) level, the contextual (or "life domain") level, and the situational (or state) level. At the contextual level, motivation is influenced by social factors that are specific to each "life domain", which in turn, leads to contextual consequences. At the situational level, motivation is "assumed to be unstable because of its responsiveness to the environment." Operationally, Vallerand suggested using a multidimensional approach via the administration of several instruments, such as the General Causality Orientation Scale (GCOS; Deci & Ryan, 1985a) for the global context, instruments such as the Sport Motivation Scale (Briere, Vallerand, Blais, & Pelletier, 1995) for the contextual level, and a self-report measurement tool, the Situational Motivation Scale (SIMS, Guay, Vallerand, & Blanchard, 2000). An alternative means to accomplish this goal suggested by Vallerand was to integrate the essential elements into one motivation index, such as the Self Determination Index (a.k.a. the "Relative Autonomy Index") (Vallerand, 2002).

According to Vallerand's model, the impact of social factors on motivation at a given level is mediated by perceptions of competence, autonomy or relatedness. "Social factors refer to both human and nonhuman factors encountered in our environment, such as comments from another person (human) or instructions on a sign (nonhuman)" (Vallerand & Ratelle, 2002, p. 48).

In an examination of the effects of success or failure on situational, contextual, and global motivations, Vallerand (1996) found that failing the task significantly undermined the individual's situational intrinsic motivation, but increased amotivation, when compared to those individuals who successfully completed the task. On the other hand, contextual and global motivations were not significantly impacted by the manipulation of the situational social factor. In an examination of the impact of competition on situational motivation, Reeve and Deci (1996) found evidence that this relationship was mediated by perceptions of competence and autonomy.

In the sports domain, a study by Blanchard and Vallerand (1996a) revealed that basketball players' perceptions of relatedness to their teammates mediated the impact of individual and team performance on self-determined forms of motivation at the situational level. In a follow-up study, Blanchard and Vallerand (1996b) found that the impact of social factors on motivation at the contextual level was mediated by perceptions of competence, autonomy, and relatedness. Although studies, such as the ones mentioned above, have shown that perceptions of competence, autonomy, and relatedness mediate the impact of social factors on a participant's motivation at the situational, contextual, and global levels, no published study has examined the relationship between these variables in the context of a spectator at a sporting event.

Furthermore, Vallerand's model has suggested that there are both "top-down" and "bottom-up" effects of motivation. Top-down effects inferred that "global motivation should have a stronger impact on contextual motivation than on situational motivation and contextual motivation should influence situational motivation" (Vallerand & Ratelle, 2002, p. 50). Thus, an individual who was generally controlled in his or her orientation toward events (global motivational level) would likely be influenced by social factors, such as public self-consciousness and environmental pressure, within a given context, such as watching a youth sports event. Hence, it is plausible that a control-oriented parent would be more likely to feel more pressure and respond more defensively than an autonomous-oriented parent to specific events that occur while watching their children's sports events. On the other hand, bottom-up effects suggested the reverse: situation-specific motivation influenced contextual and, to a lesser extent, global motivational levels. Over time, contextual motivations would have "recursive" effects on one's global motivational orientation.

Based on Vallerand's (1997) hierarchical framework, "individuals differ in the extent that they are generally pressured or ego-defensive across situations, and some situations cause more stress and reactivity than others" (Neighbors, Vietor, & Knee, 2002 p. 326). Thus, it would seem prudent that an examination of the motivational causes of sport parent aggressive behaviors (those enacted on the sidelines of youth sports games) encompass an individual's global motivation, as well as their motivation in specific spectating situations.

Pressure

SDT has been used to describe differences in individuals; however, the theory has also been applied to describe differences in motivationally facilitative environments in education (Deci, Nezlek, & Sheinman, 1981), medicine (Williams, Rodin, Ryan, Grolnick, & Deci, 1998), and the workplace (Deci, Connell, & Ryan, 1989). In the context of the home environment, evidence has shown that parents, who were autonomy supportive, valued children's autonomy; encouraged children to solve their own problems; were able to take their children's perspectives; and minimized the use of pressures and controls (Grolnick & Ryan, 1989). On the other hand, "parents, who were controlling, valued obedience and conformity; solved children's problems for them; led interpersonal interactions; and parented from their own, rather than the child's, perspectives" (Grolnick & Apostoleris, 2002, p. 161). The research literature affirms the positive effects of autonomy support and the negative effects of parental control on children.

Grolnick and Apostoleris (2002) ask the question: "What makes many well-meaning, autonomy-supportive parents behave in a controlling manner towards their children?" According to the researchers, object relations and family therapy theorists have provided two models to explain this phenomenon. Margaret Mahler (1968) and Alice Miller (1981) have suggested, "parents have a hard time taking children's perspectives and acting in ways that are in the children's best interests" (Grolnick and Apostoleris, 2002, p. 162). Alternatively, Minuchin (1974) described an enmeshed family in which the thoughts and behaviors of parents are confused with those of their children. Hence, these parents intruded, across family members' boundaries, into the

lives and feelings of their children. Grolnick and Apostoleris (2002) presented another possibility in which contextual factors, such as pressure and evaluation, undermine the parents' abilities to provide an autonomy supportive parenting environment. Pressure, the researchers attest, can be categorized into three types: pressure from without, pressure from below, and pressure from within.

External stress and other pressures, such as economic pressures, "focus parents on their own immediate predicaments making it more difficult for them to take their children's perspectives … (furthermore) allowing children to solve their own problems is likely to require more time and patience than solving the problems for them" (Grolnick and Apostoleris, 2002, p. 162). Hence, the parental resources necessary for autonomy supportive parenting (time and psychological availability) may be undermined by external stress. In a recent study, Grolnick, Weiss, McKenzie, & Wrightman (1996), that examined the influence of negative life events on parenting styles in parents of adolescents, when controlling for economic stress, the results suggested that the more negative life events that the mother reported, the less autonomy supportive the parents were rated. The results also indicated that there were no significant relations between stressful events and controlling behavior for fathers. The findings indicate that mothers, more likely the primary caretakers, were especially vulnerable to the damaging effects of life's stressful events.

In addition, there is a myriad of literature within the domain of child development and temperament to support the theoretical bi-directional nature of influence between parents and children. Jelsma (1982) experimentally manipulated the "difficultness" of children (trained confederates) as mothers taught them an anagram task. The results

showed that mothers were more controlling with more difficult children. Anderson, Lytton, and Romney (1986) found further support for this type of pressure in an experiment that involved mothers of normal and mothers of conduct-disordered children interacting in a laboratory setting. Results indicated the conduct-disordered children elicited more controlling responses regardless of whether the responses stemmed from their own mother or another mother. Additionally, mothers exhibited fewer positive behaviors when interacting with their own children than others, regardless of whether they were normal or conduct-disordered. In the previous adolescent study, Grolnick et al. (1996) examined the relationship between parental perceptions of the child's behavior and parenting styles. The results indicated that mothers who believed their adolescents were difficult were more controlling than mothers who rated their children as easier. In contrast, father who perceived their adolescents as more difficult were more likely to withdraw from interacting with them, rather than controlling the child. These studies indicated that child's behavior, in part, dictated some influence on parental behaviors toward that child.

While external pressure and child characteristics have been shown to influence parental behaviors in the domain of the home environment, "internal pressure from within parents to have their children perform in specified ways" (Grolnick and Apostoleris, 2002, p. 167) may not only determine parenting styles within that context, but may also influence parental behaviors in the domain of academics or sports. Central to this concept was the role of ego-involvement (Sherif & Cantril, 1947), in that ego-involved persons hinged their self-esteem on some outcome. Thus, if a negative outcome of an activity posed a threat to self-esteem, people would become highly motivated to

protect their self-esteem by creating a positive outcome. In a recent study, Grolnick, Gurland, DeCourcey, & Jacob (2002) examined the question: "Will parents who are ego-involved in their children's performance show more control-oriented behaviors, and how will this affect the children?" Sixty mothers and their third grade children completed two homework-like tasks (a map task and a poem task). Prior to the tasks, mothers rated their attitudes towards supporting versus controlling children; whereas, their children rated their mothers' autonomy support and completed their own motivational questionnaire. The mother-child dyads were assigned to either a high performance-pressure condition or a low performance-pressure condition. Videotapes of the mother-child dyads working on the tasks were coded for verbal and non-verbal, as well as, supportive and autonomous behaviors. For the poem task, mothers who were oriented towards the performance of their children were more verbally controlling with their children. In addition, the mothers' behavior was highly dependent upon their parenting style. These findings were also observed for the map task; however, mothers who had controlling styles and were subjected to the evaluation of the high-pressure condition were highly controlling. Further analysis of the data on the map task, while controlling for the child's grades, revealed that the children whose mothers had controlling attitudes and were in the high-pressure condition showed poorer performances than the children in the other three groups. In addition, the children whose mothers had controlling attitudes and were in the high-pressure condition wrote the least creative poems of the four groups. Furthermore, the data analysis lent credence to the idea that "mothers in the high-pressure condition behaved in a more controlling way and that, in turn, led to their children writing accurate but uncreative poems when they were alone" (Grolnick and Apostoleris, 2002, p. 173).

The aforementioned study supported the notion that "promoting parents' ego-involvement in their children's performance leads to parents being more controlling, especially when they have controlling styles to begin with … Thus, when academic or sports endeavors stress competition or evaluation, some parents will be more vulnerable to the effects of such pressures than others. The results also suggest that the effects of the environment on parents may differ according to the type of task in which they and their children are engaged" (Grolnick and Apostoleris, 2002, p. 173). Hence, an examination of the "sideline rage" phenomenon within the youth sports environment might need to be sport specific. For this research project, the focus will be within the context of the youth soccer environment.

Ego Defensiveness

In the section on motivational orientations, recall that a control-orientation is positively correlated with feelings of stress and tension (Ryan, 1982; Ryan, Mims, & Koestner, 1983), public self-consciousness, and is associated with the adoption of a pressured, ego-involved stance toward achievement tasks (Deci & Ryan, 1985b; Ryan, Koestner, & Deci, 1991). Recently research has demonstrated that controlled orientations are positively associated with self-serving attributional tendencies (Knee & Zuckerman, 1996), self-handicapping tendencies and more defensive coping strategies in response stressful events (Knee & Zuckerman, 1998), more defensive interpersonal functioning (Hodgins, Koestner, & Duncan, 1996), and driving anger and aggressive driving (Knee, Neighbors, & Vietor, 2001; Neighbors, Vietor, & Knee, 2002).

Ryan (1982) and Plant and Ryan (1985) found that ego-involved participants reported more feelings of pressure and tension and less enjoyment than when those participants who were task-involved. Surprisingly, Grolnick, Gurland, DeCourcey, & Jacob, (2002), in their mother-child task study, reported that there were no statistically significant differences between the ego-involved mothers in the high and low pressure conditions in terms of perceived pressure, enjoyment or feelings of competence from working with their children. "What is the difference between being ego-involved in your own performance versus that of your children?" (Grolnick and Apostoleris, 2002, p. 174)

Grolnick and Apostoleris (2002) suggested that the reason the mothers' affective experiences did not differ across the high and low-pressure conditions is that "when parents are ego-involved in their children's performance, they can push the children toward positive outcomes, thereby relieving their own pressure of evaluation. Thus, (parents) can transform the evaluation they feel into behavior that is directed toward their children. (Hence), by controlling the children, the mothers in the high-pressure condition may have inadvertently lessened their own pressure" (Grolnick and Apostoleris, 2002, p. 174).

For a moment, let's step onto the sidelines of the soccer megaplex on any given weekend. As the game progresses, the unknowing, ego-involved parent becomes increasingly involved with the action in their children's soccer match. Thus, with the best of intentions, the more controlling the parents' verbal and non-verbal behaviors become, the more relief they receive from the surmounting situational pressures of the game. Concurrently, the more situational pressure the ego-involved parent perceives, the more controlling that parent's verbal and non-verbal behaviors become. Hence, the vicious

downward spiral of this cycle feeds on itself, until the sporting event comes to a conclusion, or the ego-involved parent finds another release for the surmounting rage, such as, in the extreme case of Thomas Junta, physically striking and eventually killing another person. Thus, it is plausible to conceptualize ego-defensiveness in this context as the extent to which a parent perceives the actions on the field of play to be directed at themselves, and their child.

Anger

Although, the accepted psychological definition of anger was the intent to cause psychological or physical harm, there has been a tremendous range of semantic connotations that accompany the use of this word, particularly when used in a self-report instrument within a naturalistic setting. Social desirability inhibits most individuals from admitting that they become angry, especially in the context of something so trivial as their children's sports event. Yet, some parents will readily admit to becoming irritated, mad, or distressed due to situational circumstances that occur during these games.

In their examination of parental emotions and behaviors that contribute to the continuity and change in preschool children's externalizing behavior problems, Denham, Workman, Cole, Weissbrod, Kendziora, & Zahn-Waxler (2000) used a 7-point observation scale for parents that defined the construct of anger as follows: sullen, petulant; intense outbursts with raised voice; glaring; verbal expressions and vocalizations of anger, sarcasm, irritation, and exasperation. Thus, the researchers used a range of verbal and non-verbal behaviors to represent the emotion.

In their study of road rage, Neighbors, et al. (2002) operationalized the construct of anger in the form of several questions on a behavior self-report record. The relative intensity of the construct was measured on a 7-point Likert scale that spanned from being just a little bit mad (1) to really fuming (7). The duration of anger was measured using time interval segments ranging from less than a couple of minutes (1) to multiple days (9). The researchers combined the measures of intensity and duration to create a single composite index of anger. Since one of the goals of this research project was to extend the path model presented in Neighbors, et al. (2002) into the domain of youth sports, the present study will employ a similar operational methodology to the construct.

Summary of Literature Review

Consistent with self-determination theory (SDT; Deci & Ryan, 1985b, 1987, 1991) and Vallerand's (1997) framework, I have proposed an extension of Neighbors, et al. (2002) hierarchical motivational model of driving anger into the context of youth sports. In the proposed model of sport parent anger, it has been suggested that both global motivation (COT; Deci & Ryan, 1985a) and situational-specific motivation (Blanchard and Vallerand, 1996a, 1996b; Vallerand & Ratelle, 2002) would account for sport parent anger, which in turn would predict sport parent aggression.

In Grolnick, et al. (2002), the findings revealed that the children whose mothers had controlling attitudes and were in the high-pressure condition showed poorer performances on the map task than those children whose mothers were in the other three conditions – controlling attitudes and low-pressure, autonomous attitudes and high pressure, and autonomous attitudes and low pressure. The study supported the notion

that "promoting parents' ego-involvement in their children's performance leads to parents being more controlling, especially when they have controlling styles to begin with … Thus, when academic or sports endeavors stress competition or evaluation, some parents will be more vulnerable to the effects of such pressures than others" (Grolnick and Apostoleris, 2002, p. 173).

Moreover, Ryan (1982) and Plant and Ryan (1985) found that ego-involved participants reported more feelings of pressure and tension and less enjoyment than those participants who were task-involved. Surprisingly, Grolnick, et al., (2002), in their mother-child task study, reported that there were no statistically significant differences between the ego-involved mothers in the high and low pressure conditions in terms of perceived pressure, enjoyment or feelings of competence. Grolnick and Apostoleris (2002) suggested that the reason the mothers' affective experiences did not differ across the high and low-pressure conditions is the inadvertent use of an ego-defense mechanism, in that "when parents are ego-involved in their children's performance, they can push the children toward positive outcomes, thereby relieving their own pressure of evaluation" (Grolnick and Apostoleris, 2002, p. 174).

Hence, within the domain of youth sports, it is tenable to imagine a parent who, with the best of intentions, becomes increasingly controlling in their verbal and non-verbal behaviors as a result of mounting perceptions of pressure and escalating perceptions of ego defensiveness, especially if that parent is control-oriented to begin with. Furthermore, it is tenable to imagine that control-oriented parents become irate as a result of a bad call by a referee being viewed through the "tainted lenses" of those

perceptions. On the other hand, autonomy-oriented parents would view that same incident in a much different light.

CHAPTER 3

METHOD

Pilot Study

During the 2003 fall soccer season, volunteers were recruited to assist the researcher in an assessment of "Sport Parent Behaviors." Approximately twenty minutes prior one of their children's soccer games, volunteers were asked to complete a brief questionnaire (estimated time requirement will be between ten to fifteen minutes). Subjects were informed that they are free to withdraw from the research project at any point in time. In addition, the volunteers were informed that they would be asked to complete a self-report record during the course of their child's game, using the provided forms. Volunteers were asked to complete the self-report record for the first incident that occurred that may have made them mad or angry, based on a continuum of becoming just a little bit mad (1) to really fuming (7). Lastly, volunteers were asked to complete a follow-up questionnaire to assess the accuracy of their responses on their self-report records.

In order to assure anonymity of subjects on questionnaires and corresponding self-report records, the forms were coded for each individual using the first three letters of the subject's maiden name, followed by their six-digit birthday (e.g., smi040938). Finally, subjects retained a card with contact information for the experimenter, in case questions arise.

The pre-game questionnaire administration was very successful (94% completion rate); however, it became readily apparent after several games that the two things occurred: 1) The fact that the parents had the self-report forms in their hands influenced

their behaviors, actions, and the conversations among themselves (centering on the subject matter of the study); and 2) The questionnaire (and the study, for that matter) was inhibiting the parents' ability to enjoy watching their children play the game. To this extent, several parents returned the completed self-report forms prior to halftime reporting no incidents of becoming mad or angry, only to be observed by the researcher twenty minutes later yelling at the referee in dispute of a foul.

Hence, in the interest of not contaminating the normal experience of parents' watching their children play soccer and gathering substantive data, two procedural changes were decided upon: 1) The most judicious time for parents to complete the self-report assessments was immediately following the conclusions of the game, while the coach has the players in a post-game meeting; and 2) Instead of parents reporting the first incident that may have made them mad or angry, parents were asked to report the most notable incident, if any occurred at all.

Research Assistants' Training

Several graduate and undergraduate research assistants were recruited to assist in the administration of the questionnaires. During a preseason tournament, research assistants were taught, via a script, discussion and observation, the proper procedures and language to approach coaches and parents for participation in the study. In addition, research assistants learned how to distribute and collect questionnaires, as well as how to answer the questions from the participants.

Subjects

The subjects were 340 parents of youth soccer players (boys and girls ages 8-15, in two-year groupings) who participate in the recreational, classic, and travel levels of the Maryland State Youth Soccer Association (MSYSA) and the United States Youth Soccer Association (USYSA). MSYSA has more than 65,000 youth registrants for each of its semi-annual 8-week seasons. Subjects were recruited via notices on the MSYSA internet site (www.msysa.org), its member's websites (i.e., www.msisoccer.org), email to coaches, flyers to teams, and in person.

During the 2004 spring soccer season, volunteers were recruited to assist the researcher in an assessment of "Sport Parent Behaviors." Approximately twenty minutes prior one of their children's soccer games, volunteers were given an informed consent form and asked to complete a brief questionnaire (estimated time requirement will be between ten to fifteen minutes). Subjects were required to read an informed consent form. In order to assure the anonymity of the subjects, the subjects initialed the consent form and return it with the pre-game questionnaire. Subjects were informed that they are free to withdraw from the research project at any point in time. In addition, the volunteers were informed that they will be asked to complete a self-report record at the conclusion of their child's game, using provided forms, for that particular day's event. Lastly, volunteers were asked to complete a follow-up questionnaire to assess the accuracy of their responses on their self-report records.

In order to assure anonymity of subjects on questionnaires and corresponding self-report records, the forms were coded for each individual using the first three letters

of the subject's maiden name, followed by their six-digit birthday (e.g., smi040938). Finally, subjects retained an additional copy of the informed consent form, with contact information for the experimenter, in case questions arise.

Design

This research project used multiple regression analysis, as well as structural equation modeling (SEM) to examine the relationship between sport parent motivation orientations and parents' motivations in specific situations at their children's' sports events, which in turn predict sports parent anger and subsequent aggression. The proposed path model (Figure 1) is based on an analogous study that examined driving anger and aggressive driving behaviors as a function of motivational orientations (Neighbors, Vietor, & Knee, 2002).

Variables

Control Variables

Parents' demographic information were assessed using age, gender, marital status, level of education, and ethnicity. Additional family demographic information was assessed using residential county, level of household income, number of children, and the age of the eldest child/athlete (this will provide information needed to ascertain if there are any differences between the age of the eldest child/athlete and the age of the child/athlete being viewed during the self-report record process). (Appendix A)

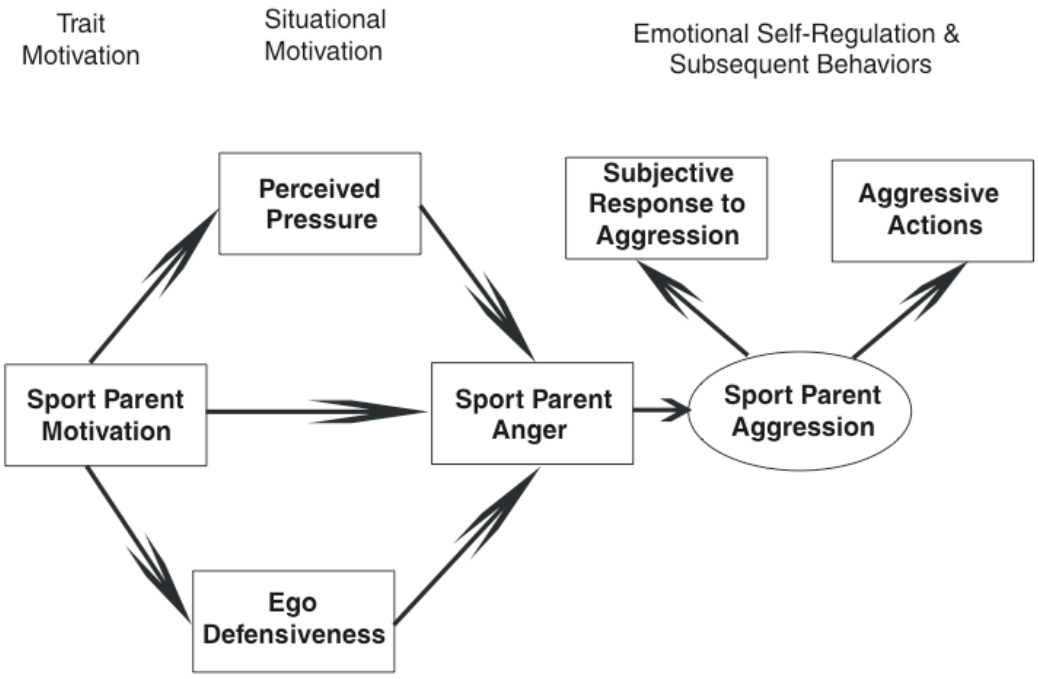

Figure 1 Theoretical motivational model of sport parent "sideline rage"

Independent Variable

Sport parent motivation orientations were measured using the General Causality Orientations Scale (GCOS, Deci & Ryan, 1985, Hodgins, Koestner, & Duncan, 1996, Ryan, 1989). The scale is a trait measure of self-determination that assesses a person on each of three subscales. The autonomy orientation assesses "the extent to which a person is oriented toward aspects of the environment that stimulate intrinsic motivation, are optimally challenging, and provide informational feedback." The control orientation assesses "the extent to which a person is oriented toward being controlled by rewards, deadlines, structures, ego-involvements, and the directives of others. In the U.S., at least, a person high in the controlled orientation is likely to place extreme importance on wealth, fame, and other extrinsic factors." The impersonal orientation assesses "the extent to which a person believes that attaining desired outcomes is beyond his or her control and that achievement is largely a matter of luck or fate" (Deci & Ryan, 2003, p. 1).

Two subscales of the original version of the scale (Appendix B), which consists of 12-vignettes and 24 items (12 autonomy and 12 control), will be utilized. Each vignette describes a typical social or achievement oriented situation and is followed by a controlled response, on 7-point Likert-type scales, indicating the extent to which each response is typical for them. Summing the individual's 12 responses on each of the corresponding subscale items generates subscale scores. Higher scores on the autonomy subscale indicate a high autonomy orientation for that individual. On the other hand, higher scores on the control subscale are indicative of the individual being more control oriented. Internal consistency (Cronbach's alpha) has been found to be 0.75 and test-

retest coefficients of 0.74 over two months. In addition, the scale has correlated with a variety of related constructs, as researchers expected (Deci & Ryan, 2002).

Based on their respective scores on the GCOS, parents' ratings were averaged across all 12 scenarios, giving them an average score on each of the two motivational dimensions – autonomy oriented and control oriented.

Mediating Variables

Motivation at the situational level was assessed using the sport parent behavior record (See Appendix C and Appendix D for instructions and sample record). Two indices were constructed to conceptually measure situation specific motivation (specifically, control orientation). Hence, feeling more pressure and more ego-defensive was indicative of lower levels of self-determined motivation at this level (Neighbors, Vietor, & Knee, 2002).

Parents' perceptions of feeling pressured with regards to their child's soccer game were measured using four items (7 to 10). In order to obtain independent measurements, parents were asked to recall the moments just before the most notable incident that caused them to become mad or angry, and rate their perceptions of the extent to which they were in a rush prior to the game, in danger of being late for another function, feeling stress, and feeling pressure. Each of these items utilized a 7-point Likert-type scale. Responses from these items were standardized and summed to create a measure of feeling pressure. Neighbors, et al. (2002) reported an internal validity of .88 using these items in their study on road rage.

Parents' ego-defensiveness with regards to their child's soccer game was measured using two items (3 and 4), which asked to what extent the parent perceived the most notable incident that made them mad or angry as being directed at their child, as well as themselves. Response was given on a 7-point Likert-type scale, and subsequently, standardized and summed to create a measure of ego-defensiveness (Neighbors, et al., 2002).

Dependent Variables

Sport parent anger was assessed with two items on the self-report record (5 and 6). One item addressed the intensity of the anger experienced during the most notable incident that made them mad or angry, whereas the other measured the duration of the anger for that same incident. Intensity was measured on a 7-point scale (1 = not angry at all, 7 = extremely angry). Duration was assessed by having the subjects circle one of nine time periods and was scored from 0 (no anger experienced) to 9 (longer than most of the day). Responses from these two items will be standardized and summed to create a measure of sport parent anger (Neighbors, Vietor, & Knee, 2002).

Sport parent aggression was measured in two ways, henceforth referred to as subjective response to aggression and aggressive actions. Subjective response to aggression was measured by having subjects rate how aggressive their responses were with four items on the self-report record (item 11 reversed, 12, 15 and 16 reversed). Two items asked subjects how becoming mad or angry affected their spectating, whereas the

other two asked subjects to rate the aggressiveness of their response to the most notable incident that made them mad or angry. Neighbors, et al. (2002) reported an internal validity of .72 using similar items in their study on road rage. Responses from these four items will be standardized and summed to create a measure of sport parent subjective aggression (Neighbors, Vietor, & Knee, 2002). In addition, five items (Items 17 – 21) asked subjects how their response made them feel. Subjects were asked to what extent they perceived they felt good, bad, guilty, "got even", and that their child's team benefited from their response.

Aggressive actions were measured based on the specific actions (Item 13) that subjects reported engaging in as a response to becoming mad or anger. The aggressive actions included behaviors that were verbal, non-verbal, and physical. Assigning a weight to each action based on how aggressive the action is considered created an index. Weights were based on independent ratings from six raters (experts in the domain of the of youth sports) who rated each action on a scale from 1 to 5. Neighbors, et al. (2002) reported an interrater reliability of .93 using similar items in their study on road rage. Scores for this measurement were calculated as the sum of the weights for all the actions reported. For example, if an individual reported yelling, cursing, rising from their seat, and moving towards the field/court in response to an event, the aggression score was calculated by summing the four weights of the respective actions.

Descriptive Dependent Variables

Type of events that caused sport parents to become mad or angry were measured in two ways. As a means of determining what made parents mad or angry, subjects were

asked to provide a brief (one or two sentence) description (Item 1) of the most notable incident that caused them to become mad or angry. In order to alleviate the inhibitory effect of social desirability, the construct of anger for this research project was explained to subjects in layman's terminology as a continuum of becoming just a little bit mad (1) to really fuming (7). In addition, sports parents were asked to choose from a list of categories (Item 2) derived from six types of events: hostile remarks/gestures, illegal play, referee/umpire presence, own team play, opponents' discourteous behavior, and coaches' behavior. Subjects were allowed to circle more than one of these for each event (e.g., your child is deliberately pushed by an opponent, but the referee is on your side of the field and doesn't blow the whistle for a foul – hence, this could be categorized as being either illegal play or opponents' play, as well as official presence). Percentages of the seven subscales were used for descriptive purposes to categorize the frequency of the types of events that caused the subjects to become mad or angry.

Target of sport parents' aggressive actions is defined as the intended recipient of the aggressive responses made by the sports parent, regardless of the nature of the response (i.e., verbal, non-verbal, or physical). In order to validate the construct of anger and further examine parents' behaviors in this context, subjects were asked to choose from a list of categories (Item 14) derived from the Parents' Observation Instrument at Sport Events (POISE; Kidmann & McKenzie, 1996). The categories included Son or Daughter (SD), Child's Teammate (CT), Child's Coach (C), Child's Team (T), Teammate's Parent (P), Referee/Official/Umpire (R), Administrator (A), Opposing Team Athlete (OT), Opposing Coach (OC), Opposing Parent/Fan (OP), and Self (S).

Percentages were used for descriptive purposes to categorize the frequency of the targets of the aggressive responses made by the sports parents.

Accuracy of the self-report sport parent behavior record was assessed in a six-item follow-up questionnaire (Appendix E). All items were assessed on a 7-point scale. The questionnaire assessed the subjects' perceptions of overall accuracy of the self-report records (two items), estimated percentage of sports parent anger events recorded, difficulty of keeping records, and estimated impact of keeping records on sport parent anger. Using this technique in their study on road rage, Neighbors, et al. (2002) reported subjects were relatively accurate in their reporting of driving anger incidents (M = 5.52, SD = 1.11 on a 7-point scale) and that the self-report behavior records did not heavily influence their frequency of experiencing driving anger (M = 2.40, SD = 1.56 on a 7-point scale).

Chapter 4

RESULTS

Descriptive Statistics

Slightly less than half (47.1%) of the sample of parents sampled in this study reported no anger-causing events while watching their children playing soccer (Table I). Table I also shows that the parents reported the referee and their own child's team play were the largest sources of their anger (18.9% and 15.0%, respectively). Additional anger-causing events were attributed to discourteous opponents (6.8%), hostile remarks or gestures (5.1%), coaches (4.7%), illegal play (3.3%), and other types of events (7.7%) (Table I). These percentages indicate that, in general, more than half of the parents sampled experienced some level of anger while watching their children play soccer.

The mean score for all parents on the dependent measure of anger intensity (AI) was M = 1.84 (S.D. = 1.35; Table II). The mean being slightly higher than the lowest score on the scale suggests that, in general, this sample of parents became only slightly angry while watching their children play soccer. The mean score for all parents on the dependent measure of anger duration (AD) was M = 0.87 (S.D. = 1.28; Table II). While almost forty-eight percent of this sample of parents did not become angry, 37.6% remained angry only for a relatively brief period of time (less than two minutes). These scores indicate that, in general, although more than half the sample of parents did report experiencing anger while watching their children play soccer, the level of intensity and duration was slight. Therefore, it is tenable that the label that has been created by the mass media, "sideline rage," might be an inappropriate use of words to explain this phenomenon. Due to their lack of normal distribution, the AI and AD scores were

Table I: Frequency of Anger-Causing Events

Type of Event	*Proportion of Self-Report Records Where Item Was Endorsed (%)*	*Number of Respondents Who Recorded This Event at Least Once (N = 340)*
Nothing	47.1	160
Referee	18.9	64
Own team's play	15.0	51
Opponents were discourteous	6.8	23
Hostile remarks or gestures	5.1	17
Coach	4.7	16
Illegal Play	3.3	11
Other	7.7	26

Note: Proportion totals exceeded 100% due to participants' indicating more than one anger-causing event.

transformed by their natural logs, standardized and added to create a composite index of sport parent anger (SPA) (M = 0.00, S.D. = 1.85, Table III) (scores ranged from –1.53 – 6.72). Internal reliability (Cronbach's alpha) in this study was .79.

Concerning ego defensiveness, it appears that, in general, the subjects did not perceive the actions that may have caused them to become mad or angry to be directed at themselves (Ego-P) (M = 1.20, S.D. = 0.85, Table II), nor to be directed at their children (Ego-C) (M = 1.46, S.D. = 1.36, Table II). Each of these scores was also transformed by their natural logs, standardized and added to create a composite index of ego defensiveness (ED) (M = 0.00, S.D. = 1.69, Table III) (scores ranged from –0.61 – 9.45).

Regarding perceived pressure, it appears that this sample of parents, by and large, were not in a rush to get to their children's games on time (PB) (M = 2.04, S.D. = 1.78, Table II), nor were they going to be late for another function (LT) (N = 339, M = 1.29, S.D. = 0.94, Table II). These scores suggest that this sample of parents appropriately scheduled other activities around their children's game schedule. Furthermore, the mean scores on the measure of parents feeling stress (Stress) was M = 1.47 (S.D. = 1.10, Table II) and pressure (P) was M = 1.40 (S.D. = 1.01, Table II) were slightly above the lowest scores on their respective scales. These scores suggest that, in general, these parents, prior to the events that may have made them mad or angry, were relatively free from the perceived effects of stress and pressure. Each of these scores were transformed by their natural logs, standardized and added to create a composite index of perceived pressure (PP) (N = 339, M = 0.00, S.D. = 3.08, Table III) (scores ranged from –1.85 – 12.72). Internal reliability (Cronbach's alpha) in this study was .71.

Table II: **Means and standard deviations of continuous variables**

Variable	Mean (Std. Dev.)	Range
Sport Parent Motivation		
Causality Orientation Scale–Autonomy (GCOS-A)	70.76 (7.72)	39-84
Causality Orientation Scale-Control (GCOS-C)	49.18 (9.79)	23-82
Sport Parent Anger		
Anger Intensity (AI)	1.84 (1.35)	
Anger Duration (AD)	0.87 (1.28)	
Ego Defensiveness		
Ego Defensiveness – Parent (Ego-P)	1.20 (0.86)	
Ego Defensiveness – Child (Ego-C)	1.46 (1.36)	
Perceived Pressure		
Rush Before Game (PB)	2.04 (1.78)	
Late for another event (LT)	1.29 (0.94)	
Feeling Stress (Stress)	1.47 (1.10)	
Feeling Pressure (P)	1.40 (1.01)	
Behaviors		
Response Behavior (RB)	1.97 (2.13)	
Subjective Response		
Watch Passively (WP)	2.31 (1.73)	
Watch Intensely (WI)	2.68 (1.90)	
Subjective Aggression (SA)	1.57 (1.10)	
Subjective Passivity (SP)	4.51 (2.29)	

Table III: **Means and standard deviations of averaged and composite index variables**

Variable	Mean (Std. Dev.)	Range
Sport Parent Motivation – Autonomy (SPM-A)	5.90 (0.64)	3.3-7.0
Sport Parent Motivation – Control (SPM-C)	4.10 (0.82)	1.9-6.8
Sport Parent Anger (SPA)	0.00 (1.85)	-1.53-6.72
Ego Defensiveness (ED)	0.00 (1.69)	-0.61-9.45
Perceived Pressure (PP)	0.00 (3.08)	-1.85-12.72
Aggressive Action (AA)	0.00 (1.00)	-0.60-4.83
Subjective Response to Aggression (SRA)	0.00 (1.81)	-4.60-6.57

In terms of behaviors in response to what may have made this sample of parents mad or angry, only twelve percent (12.4%) of the anger-causing events resulted in more than one response. The majority of the parents (61.2%) took no action at all (Table IV). Deductive analysis of this statistic revealed a nested subpopulation of 13.3% of parents who reported becoming angry, but took no action as a result of their emotional response. Nineteen percent of the participants indicated that they muttered comments, while slightly more that 10% indicated that they looked away from the field or yelled comments (10.7% and 10.1%, respectively, Table IV). In addition, this sample reported that 7.8% of the parents watching their children's games stood up from their seat in response to an incident that caused them to become angry, while others walked towards the field of play (3.0%), walked away from the field (2.7%), made gestures (1.8%), or responded in another manner that was not listed (3.5%) (Table IV). Table IV also shows that only one individual in the sample (0.3%) encouraged other parents to confront another in response to the anger-causing incident. Each of the above reported behaviors was multiplied by their respective weights (Table V), based on its relative level of aggression, to create a response behavior score (RB)(M = 0.96, S.D. = 0.44, Table II). Due to its lack of normal distribution, the RB scores were transformed to their natural logs and standardized to create an index of aggressive actions (AA)(M = 0,00 S.D. = 1.00, Table III) (scores ranged from –0.60 – 4.83). If a participant indicated multiple responses, then the cumulative response weights were added together to create that subject's AA score.

In reference to the target of the responsive behaviors, the majority (60.3%) reported that there were no intended targets, while less than five percent (4.7%) indicated themselves as the target (Table VI). Not surprisingly, 12.7% of the parents designated

Table IV: Frequency of Response Behaviors

Type of Response	*Proportion of Self-Report Records Where Item Was Endorsed (%)*	*Number of Respondents Who Recorded This Response at Least Once (N = 340)*
No action at all	61.2	208
Muttered comments	19.0	64
Looked away in frustration or disgust	10.7	36
Yelled comments	10.1	34
Stood up from seat	7.8	26
Walked towards field	3.0	10
Walked away from field	2.7	9
Made gestures	1.8	6
Encouraged others to confront another	0.3	1
Other	3.5	12

Note: Proportion totals exceeded 100% due to participants' indicating more than one response behavior.

Table V: Weights assigned to aggressive actions

Action	Aggression Weight
Physical Confrontation	5.00
Encouraged others to confront another	4.00
Walked towards the field	3.83
Made gestures	3.83
Name calling	3.67
Yelling	3.17
Stood up from seat	2.67
Muttered comments	2.00
Walked away from field	1.67
Looked away in frustration/disgust	1.33
Other	1.33
No action at all	1.00

Note: Weights were assigned according to mean ratings of six independent raters. Inter-rater reliability was .91.

Table VI: Frequency of Targets to Response Behaviors

Type of Target	*Proportion of Self-Report Records Where Item Was Endorsed (%)*	*Number of Respondents Who Recorded This Target at Least Once (N = 340)*
No target	60.3	205
Referee	12.7	43
Child's team	7.7	26
Son or Daughter	7.1	24
Teammate's parent or fan	5.0	17
Self	4.7	16
Opposing team	3.3	11
Opposing parent or fan	3.0	10
Child's coach	1.8	6
Child's teammate	1.8	6
Opposing coach	1.2	4
Opposing athlete	0.6	2

Note: Proportion totals exceeded 100% due to participants' indicating more than one response behavior; hence the possibility of multiple targets.

the referee as the intended target of their behaviors in response to the anger-causing event. In terms of being a target of the parent's RB, their children's team accounted for 7.7%, followed by their own son or daughter (7.1%), a teammate's parent or fan (5.0%), their child's coach and their child's teammate (1.8% each) (Table VI). In terms of the opposition being a target of the parent's RB, the opposing team accounted for 3.3%, followed by an opposing parent or fan (3.0%), the opposing coach (1.2%), and an opposing athlete (0.6%)(Table VI).

Regarding the participants' subjective responses to the events that may have made them mad or angry, it appears that, in general, this sample of parents remained rather neutral spectators, neither passive (WP) (M = 2.31, S.D. = 1.73) nor intense (WI) (M = 2.68, S.D. = 1.90) (Table II). These scores indicate that the anger experienced had little reported effect on how the parents viewed the remainder of their children's soccer games. Furthermore, the mean score on the subjective aggression (SA) of parents' rating of their RB was M = 1.57 (S.D. = 1.10, Table II) and the subjective passivity (SP) was M = 4.51 (S.D. = 2.29, Table II). These scores suggest that, in general, these parents perceived their actions to be more passive than aggressive. Each of these scores were transformed by their natural logs, standardized and added (using the respective negative term for the two passive measures) to create a composite index of subjective response to aggression (SRA) (N = 339, M = 0.00, S.D. = 1.81, Table III) (scores ranged from –4.60 – 6.57).

In terms of the independent variable, sport parent motivation, the mean score of the GCOS-autonomy scale was M = 70.46 (S.D. 7.72, Table III) (scores range from 39-84) and the mean score of the GCOS-control scale was M= 49.18 (S.D. 9.79, Table III) (scores range from 23-82), suggesting that, in general terms, this sample of parents was

relatively more autonomy-oriented than control-oriented. Moreover, examination of the data (not shown in Tables) revealed that these means were in accordance with previous studies utilizing the same measurement scale. Subjects' total scores on each scale were averaged by the number of questions (12) to create a sport parent motivation-autonomy scale (SPM-A) (M = 5.90, S.D. = 0.64) (scores range from 3.3 – 7.0) and a sport parent motivation-control scale (SPM-C) (M = 4.10, S.D. = 0.82) (scores range from 1.9 – 6.8). Internal reliability (Cronbach's alpha) in this study was .73.

As a point of interest, Appendix F breaks down the mean and standard deviation of SPA, as well as the standardized composite index for ego defensiveness (ED) and perceived pressure (PP), by additional levels of the descriptive variables. As can be seen from the means, the gender of the parent and the gender of the child seem to have a polar effect on each of the variables. In addition, the means of parents of club/travel players tended to show more anger and ego defensiveness than the means of parents of recreation and classic players.

Correlations

Table VII shows the zero-order correlations among all variables of interest for the predicted model, as determined by Pearson's product-moment correlation. The Sport Parent Motivation–Autonomy (SPM-A) and Sport Parent Motivation–Control (SPM-C) were not significantly correlated with one another, thus both were treated as independent variables. In accordance with the theoretical construct of self-determination, SPM-A had a significant negative correlation (r = -.18, p < .01, Table VII) with ego defensiveness (ED), while SPM-C had a significant positive correlation *(*r = .21, p < .01, Table VII) with ego defensiveness (ED), although the strength of these correlations was moderately

Table VII: Zero-order correlations among all variables included in hypotheses

Measure	SPM-A	SPM-C	ED	PP	SPA	SA	AA
Sport Parent Motivation – Autonomy (SPM-A)	---						
Sport Parent Motivation – Control (SPM-C)	-.04	---					
Ego Defensiveness (ED)	-.18**	.21***	---				
Perceived Pressure (PP)	.02	.08	.31***	---			
Sport Parent Anger (SPA)	-.02	.12*	.48***	.32***	---		
Subjective Aggression (SA) †	.02	.02	.16**	.16**	.24***	---	
Aggressive Actions (AA)	.06	.07	.16**	.22***	.54***	.35***	---

Note: N = 340, unless otherwise noted † N = 339
* p < 0.05 ** p < 0.01 ***p < .001

Table VIII: Correlations between descriptive variables

Measure	PG	PA	MS	ETH	EDU	HHI	CF	CL	CG	CA	CAD
Parent Gender (PG)a	---										
Parent Age (PA)	-.23**	---									
Marital Status (MS)b	-.08	.16**	---								
Ethnicity (ETH)	.13*	.00	-.07	---							
Education (EDU)	-.11*	.22**	.03	-.03	---						
Household Income (HHI)	-.10	.13*	.34**	-.07	.39***	---					
# of children in family (CF)	-.03	-.13*	.15**	-.05	-.02	.07	---				
Competition Level (CL)	.06	-.14*	.08	-.01	-.17**	-.07	.16**	---			
Child Gender (CG)a	.13*	-.01	.01	.04	-.13*	-.08	-.06	-.12*	---		
Child Age (CA)	-.02	.15*	.02	-.01	-.10	-.15**	-.03	.06	.08	---	
Child Age Difference (CAD)	.22**	-.02	-.06	-.07	-.03	.03	.37***	.19**	.01	-.23**	---

* p < .05. ** p < .01. p < .001.
a variable was coded as 1 = male and 2 = female
b variable was coded as 1 = single, 2 = divorced or separated, and 3 = married

low. In addition, SPM-C had a significant, but low correlation to Sport Parent Anger (SPA) ($r = .12$, $p < .05$).

Ego defensiveness (ED), as shown by Table VII, was not only significantly correlated with SPM-A and SPM-C, but also had moderately strong relationship with SPA ($r = .48$, $p < .01$). Furthermore, ED had significant, but moderately low correlations with perceived pressure (PP) ($r = .31$, $p < .01$), subjective aggression (SA) ($r = .16$, $p < .01$) and aggressive actions (AA) ($r = .16$, $p < .01$). Similarly, perceived pressure (PP) had significant correlations, not only with ED, but also with SPA ($r = .32$, $p < .01$), SA ($r = .16$, $p < .01$), and AA ($r = .22$, $p < .01$). The strength of each of these relationships was moderately low.

In addition to the aforementioned relationships, sport parent anger (SPA) had a significant, but moderately low correlation with SA ($r = .24$, $p < .01$; Table VII) and a significant, but relatively strong, correlation with AA ($r = .54$, $p < .01$; Table VII). Furthermore, Table VII shows that SA had a moderate relationship with AA ($r = .35$, $p < .01$).

As a point of interest, Appendix G shows the correlations among the descriptive variables and the aforementioned variables of the path model. In general, the strengths of the significant relationships were in the low to moderately low range. It should be noted that the gender of the parents and the child they were watching was coded with a binary code that designated a "1" for males and a "2" for females. Furthermore, it should be noted that the statistical software package SPSS v11.0 automatically calibrated for the point-biserial correlations of these variables. Marital status was coded similarly with "1"

designated a single (never-married) parent; “2” corresponded to a single (divorced or separated) parent, and “3” represented a married parent.

Table VIII shows the correlations among the descriptive variables, themselves. In general, the strengths of the significant relationships were in the low to moderately low range. Parent gender (PG) was significantly correlated to parent age (PA) *(r* = -.23, $p <$ .01; Table VIII), ethnicity (ETH) (r = .13, $p < .05$; Table VIII), level of education (EDU) (r = -.11, $p < .05$; Table VIII), child gender (r = .13, $p < .05$; Table VIII), and child’s age difference from the eldest athlete (CAD) (r = .23, $p < .01$; Table VIII). These relationships suggest that the mothers in this sample were somewhat younger and slightly less educated than their husbands. In addition, this sample of mothers viewed their daughter’s games and younger child’s games more than their spouses.

Parent Age (PA) had significant relationships with marital status (MS) (r = .16, $p < .01$; Table VIII), EDU (r = .22, $p < .01$; Table VIII), household income (HHI) (r = .13, $p < .05$; Table VIII), the number of children in the family (CF) (r = -.13, $p < .05$; Table VIII), child’s competition level (CL) (r = -.14, $p < .05$; Table VIII), and child age (CA) (r = .15, $p < .05$; Table VIII). These correlations suggest that more older parents were married, better educated, and had higher levels of income than the younger parents of this sample. In addition, it appears that the older parents had older, but fewer children who played less competitive levels of youth soccer than the subjects who were younger parents.

As well as the aforementioned relationship, it was not surprising that MS had a significant, albeit moderately low, correlation with HHI (r = .34, $p < .01$; Table VIII) and a significantly low correlation with CF (r = .13, $p < .05$; Table VIII). The results indicate

that married parents had higher income levels and more children than single parents. Ethnicity was only significantly correlated to PA ($r = .13$, $p < .05$; Table VIII). Once again, this relationship should be viewed with caution due to the number of subjects within each cell, as well as, the random assignment of labels.

As well the significant correlations that the parents' level of education (EDU) had with PG and PA (see above), there were also significant relationships with HHI ($r = .39$, $p < .01$; Table VIII), CL ($r = -.17$, $p < .01$; Table VIII), and CG ($r = -.13$, $p < .05$; Table VIII). These relationships suggest that fathers, older parents, and those who made more money attained more advanced degrees than those parents with relatively lower levels of education. In addition, higher educated parents had more boys and children who played less competitive levels of soccer when compared to parents with relatively lower levels of education.

Over and above the significant relationships that the level of household income (HHI) had with PA, MS, and EDU, the results indicate another relatively low significant correlation with CA ($r = -.15$, $p < .01$; Table VIII). These correlations suggest that higher income families were comprised of older, married, better-educated parents, with younger children. In addition, the number of children in the family (CF) had significant relationships with PA ($r = -.13$, $p < .05$; Table VIII), MS ($r = .15$, $p < .01$; Table VIII), CL ($r = .15$, $p < .01$; Table VIII), and CAD ($r = .37$, $p < .01$; Table VIII). These correlations indicate that for this sample, families with more children tended to have younger, married parents when compared to families with fewer children. Furthermore, it is no surprise that the results suggest that the younger children of the families with

older siblings played soccer at higher competitive levels than those families with fewer children.

Besides the aforementioned relationships with PA, EDU, and CF, the results showed that the level of competition (CL) had significant correlations with CG (r = -.12, p < .05; Table VIII) and CAD (r = .19, p < .01; Table VIII). Thus, these associations intimate that the parents of children playing youth soccer at higher competition levels had younger, less-educated parents than those children who played at the lower competition levels. Furthermore, the children playing soccer at the more competitive levels tended to be boys, from families with older siblings when compared to the children playing at the less competitive levels of soccer.

In summary of the previously mentioned significant relationship between child gender (CG) and PG (r = .13, p < .05; Table VIII), EDU (r = -.13, p < .05; Table VIII), and CL *(*r = -.12, p < .05; Table VIII), the strengths were relatively low in magnitude. The results indicate that mothers viewed girls' games more than boys' games. In regards to the significant correlations between CG and EDU, it appears that the parents of boy soccer players are relatively more educated than the parents of girl soccer players. As it pertains to the relationship between CG and CL, the results suggest that, in this sample, more boys played youth soccer at higher competitive levels than girls.

In addition to the abovementioned significant correlations child age (CA) had with PA (r = .15, p < .01; Table VIII) and HHI (r = -.15, p < .01; Table VIII), the variable had a significant relationship with CAD (r = -.23, p < .01; Table VIII). As per an a priori designed validity check of the data, these results suggest that as the age of the child increased, so did the age of the parents. However, it appears that the age of the child has

the opposite effect, as the age of the child increased, the amount of household income decreased. Not surprisingly, as the age of the child increased, the difference in ages between then age of the eldest athlete in the family and the child they watched in that particular game decreased.

A review of the aforementioned relationships between the age differential of the eldest athlete and the age of the child that the parent was watching for this particular event (CAD) revealed significant correlations with PG ($r = .22$, $p < .01$; Table VIII), CF ($r = .37$, $p < .01$; Table VIII), CL ($r = .19$, $p < .01$; Table VIII), and CA ($r = -.23$, $p < .01$; Table VIII). The results indicate that the greater the age differential (i.e., the younger the present athlete was compared to their eldest sibling), the more the game was viewed by their mother and that there were more children in that family when compared to parents viewing the games of children who were either the eldest athlete in the family (i.e., no age difference), or closer in age to the eldest athlete (i.e., smaller age differentials). It is no surprise that the findings show that when compared to smaller age differentials, those children with larger age differentials had more siblings. Furthermore, these findings indicate that the younger the sibling, when compared to the age of the eldest athlete, the higher the level of competition that that younger child would be playing. Lastly, as a means of confirmation, the results demonstrate that, when compared to those children with smaller age differentials, the children with larger age differentials were younger.

Multiple Regressions

Hypothesis 1: Sport Parent Motivation will have direct and indirect effects on Sport Parent Anger. Using SPSS v 11.0, multiple regression analysis was first used to predict the direct effects of SPM-A and SPM-C on SPA. The analysis indicated no differences

from the Pearson's correlations (it should be noted that in simple linear regressions, the standardized β is equal to the semipartial correlation coefficient, which is also equal to the Pearson's product-moment correlation coefficient (Pedhazur, 1997)); hence, the findings indicated that SPA was marginally predicted by SPM-C, $r(340) = .12$, $p < .05$, Table VII. However, the analysis also showed that SPA was not predicted by SPM-A, $r(340) = -.02$, *ns*, Table VII, while controlling for SPM-C. Therefore, hypothesis 1 is only partially accepted in that only SPM-C had a significant, but weak direct effect on SPA. This indicated that, at the trait motivational level, parents who were higher in control-orientation became slightly angrier when compared to those parents who were lower in control-orientation.

The indirect effects meant that the situational motivation variables (PP and ED) would mediate the relationship between sport parent motivation (SPM-A and SPM-C) and sport parent anger (SPA). The mediation was evaluated in accordance with Barron and Kenny's (1986) criteria, which advocates mediation when there are significant relationships between: 1) the independent variable and the dependent variable; 2) the independent variable and the mediating variable; 3) the mediating variable and the dependent variable, controlling for the independent variable, and 4) the relation between the independent and dependent variable, controlling for the mediator, is no longer significant or is greatly reduced. If all four conditions are met, complete mediation is indicated. However, if only the first three steps are met, partial mediation is signified (Kenny, Kashy, & Bolger, 1998). The differential between the step 1 and step 4 (i.e. mediation effect) is examined by comparing the Pearson's product moment correlation

coefficient (*r*) in the first step with the standardized beta coefficient (β) in step four. The resulting statistic is denoted by the symbol Δ.

In view of the fact that SPM-A did not meet the first criterion, only SPM-C was tested as the predictor. Furthermore, in regards to perceived pressure (PP) as a mediator, the relationship between SPM-C and PP was not significantly associated, $r(340) = .08$, *ns*, Table VII. Thus, step two of the criteria was not met. Therefore, only ego defensiveness (ED) was tested as a mediator of the relationship between SPM-C and SPA. Conditions one and two were met with SPM-C significantly related to SPA, $r(340) = .12$, $p < .05$, and to ED, $r(340) = .21$, $p < .001$. Condition three was also met with ED predicting SPA, $t(1,337) = 9.70$, $p < .001$, $\beta = .47$ (Table X*)*, controlling for SPM-C. In addition, condition four was satisfied, meeting the requirements for full mediation, with SPM-C no longer statistically significant, $t(1,337) = .42$, *ns*, $\beta = .02$, $\Delta = .06$, (Table X), after controlling for ED.

As a suggested by Baron & Kenny (1986), and as a means of further confirmation, the Goodman (1960) (I) version of the Sobel (1982) test of mediation was performed to examine the viability of perceived pressure (PP) and ego defensiveness (ED) mediating the relationship between SPM-C and sport parent anger. The test indicated that PP ($z = 1.31$, ns) was not a significant mediator for this relationship; however, ED ($z = 3.51$, $p < .001$) significantly mediated the relationship between SPM-C and sport parent anger. Therefore, in terms of mediation, only the latter portion of hypothesis 1 is accepted in that the relationship between SPM-C and sport parent anger was only mediated by ego defensiveness, but not perceived pressure. To summarize the accepted portions of hypothesis 1, only the control-orientation of sport parent motivation

had direct and indirect effects, as mediated only by ego defensiveness, on sport parent anger.

Hypothesis 2: The indirect effects of sport parent motivation on sport parent anger are such that control-oriented parents will become more ego-defensive and feel more pressure, thus report higher levels of sport parental anger. Conversely, autonomy-oriented parents will become less ego-defensive and feel less situational pressure, thus report lower levels of sport parent anger.

Given the previously stated findings that only ego defensiveness (ED) significantly mediated the relationship between SPM-C and sport parent anger (SPA), several subsequent analyses, using the same four step procedures that were outlined by Barron & Kenny (1986), were performed to assess the nature of the indirect effects of ED and perceived pressure (PP) on the relationship between sport parent motivation (SPM-C and SPM-A) and SPA. The resulting relationships from condition four were compared to the relationships of the direct effects on SPA.

In regards to the direct effects of ED and PP on SPA, the regression analysis revealed that SPA was strongly predicted by ED, $t\ (1,337) = 8.55$, $p < .001$, $\beta = .42$, controlling for PP, and predicted by PP, $t\ (1,337) = 3.81$, $p < .001$, $\beta = .18$, controlling for ED (Table IX). The variable tolerance of .905 was sufficiently high and the variance inflation factor of 1.105 was sufficiently low to conclude multicollinearity was not a problem in the regression estimation. This indicated that participants who reported higher levels of either perceived pressure or ego defensiveness would be associated with participants who reported higher levels of sport parent anger.

Table IX: Sport Parent Anger as a Function of Situational Motivation

Variable	Unstandardized Estimate	SE	*t*	*p* value	Standardized Estimate	Squared Part Correlation
Ego-defensiveness	.46	.05	8.55	<.001	.42	.16
Perceived pressure	.11	.03	3.81	<.001	.18	.03

Note: R^2 = .26, N = 340

Table X: Sport Parent Anger as a Function of Sport Parent Motivation – Control, as mediated by Ego-Defensiveness

Variable	Unstandardized Estimate	SE	*t*	*p* value	Standardized Estimate	Squared Part Correlation
Ego-defensiveness	.52	.05	9.70	<.001	.47	.22
SPM-C	.01	.11	.42	.67	.02	.00

Note: R^2 = .23, N = 340, Δ = .06

Table XI: Sport Parent Anger as a Function of Sport Parent Motivation – Control, as mediated by Perceived Pressure

Variable	Unstandardized Estimate	SE	*t*	*p* value	Standardized Estimate	Squared Part Correlation
Perceived pressure	.19	.03	6.01	<.001	.31	.10
SPM-C	.22	.12	1.88	<.10	.10	.01

Note: R^2 = .11, N = 340, Δ = .02

Table XII: Sport Parent Anger as a Function of Sport Parent Motivation – Autonomy, as mediated by Ego-Defensiveness

Variable	Unstandardized Estimate	SE	*t*	*p* value	Standardized Estimate	Squared Part Correlation
Ego-defensiveness	.54	.05	10.11	<.001	.49	.23
SPM-A	.19	.14	1.35	.18	.07	.00

Note: R^2 = .23, N = 340, Δ = .09

Table XIII: Sport Parent Anger as a Function of Sport Parent Motivation – Autonomy, as mediated by Perceived Pressure

Variable	Unstandardized Estimate	SE	*t*	*p* value	Standardized Estimate	Squared Part Correlation
Perceived Pressure	.19	.03	6.16	<.001	.32	.10
SPM-A	-.01	.15	-.61	.54	-.03	.00

Note: R^2 = .10, N = 340, Δ = .01

As previously stated, ED significantly mediated the relationship between SPM-C and SPA. A modification of the Sobel (1982) test (Kenny, et al, 1998) confirmed that this reduction was statistically significant, $z = 3.51$, $p < .001$. The findings indicated that parents, who were more control-oriented, became more ego-defensive than those parents who scored lower on the control-orientation scale. As a result of becoming more ego defensive, the parents who were more control-oriented, reported higher levels of sport parent anger than those parents who were lower in the control orientation.

Subsequent analyses were performed to assess how perceived pressure (PP) was associated with the direct effects of SPM-C on sport parent anger (SPA). Condition 1 was met with SPM-C, significantly related to SPA, $r(340) = .12$, $p < .05$, Table VII. Condition 2 was not met with SPM-C not significantly related to PP, $r(340) = .08$, ns, Table VII). Condition 3 was fulfilled as PP significantly predicted SPA, $t(1,337) = 6.01$, $p < .001$, $\beta = .31$, Table XI , controlling for SPM-C. Condition 4 was also satisfied with SPM-C marginally predicting the value of SPA, $t(1,337) = 1.88$, $p < .10$, $\beta = .10$, $\Delta = .02$, Table XI, while simultaneously controlling for PP. Thus, even though, all the conditions for mediation were not met (i.e. condition 2), the same pattern exists with regards to the other three criteria. Although the modified Sobel (1982) test (Kenny, et al, 1998) confirmed that the reduction was not statistically significant, $z = 1.31$, *ns*, the slight decrease in strength of the relationship between SPM-C and SPA between conditions one and four implied that a weak partial mediation by PP occurred. This indicated that parents, who were more control-oriented, perceived more pressure than those parents who scored lower on the control-orientation scale. As a result of perceiving more

pressure, the parents who were more control-oriented, reported higher levels of sport parent anger than those parents who were lower in the control orientation. Hence, we accept the first portion of hypothesis 2, although ego defensiveness has a greater impact on the levels of anger reported by parents higher in control-orientation than perceived pressure.

Analyses were performed to assess how ego defensiveness (ED) was associated with the relationship of SPM-A on sport parent anger (SPA). Step 1 of the analysis showed that SPA was not predicted by SPM-A, $r(340) = -.02$, *ns*, Table VII. Step 2 indicated that the relationship of SPM-A on ED was weak, but inversely significant, $r(340) = -.18$, $p < .001$, Table VII. Condition 3 was also met with ED predicting SPA, $t(1,337) = 10.11$, $p < .001$, $\beta = .49$, Table XII, controlling for SPM-A. Lastly, condition 4 also satisfied the mediation requirement with the predicted viability of SPM-A on SPA being substantially reduced, $t(1,337) = 1.35$, *ns*, $\beta = .07$, $\Delta = .09$, Table XII, while simultaneously controlling for ED. A modification of the Sobel (1982) test (Kenny, et al, 1998) confirmed that this "mediation" was statistically significant, $z = 3.14$, $p < .01$. Thus, the change in magnitude of the strength of the relationship between SPM-A and SPA between conditions one and four suggests that ED had a significant, but weak suppressor effect on that relationship. This indicated that parents, who were more autonomy-oriented, became less ego-defensive than those parents who scored lower on the autonomy-orientation scale. As a result of becoming less ego defensive, the parents who were more autonomy-oriented, reported lower levels of sport parent anger than those parents who were lower in the autonomy orientation. Furthermore, it is worth noting that when statistically controlling for ED, those parents who were more autonomy-oriented,

reported higher levels of sport parent anger than those parents who were lower in the autonomy orientation.

Subsequent analyses were performed to assess how perceived pressure (PP) was associated with the relationship of SPM-A on sport parent anger (SPA). As previously stated, step 1 of the analysis showed that SPA was not predicted by SPM-A, $r(340) = -.02$, *ns*, Table VII. Step 2 indicated that SPM-A was not a viable predictor of PP, $r(340) = .02$, *ns*, Table VII. Condition 3 was met with PP predicting SPA, $t(1,337) = 6.16$, $p < .001$, $\beta = .32$ (Table XIII), controlling for SPM-A. Lastly, condition 4 failed to satisfy the mediation requirement with the predicted viability of SPM-A on SPA being somewhat strengthened, $t(1,337) = -.61$, *ns*, $\beta = -.03$, $\Delta = .01$, Table XIII, while simultaneously controlling for PP. The modified Sobel (1982) test (Kenny, et al, 1998) confirmed that the reduction was not statistically significant, $z = .43$, *ns*. These findings indicated that PP had little or no effect on the relationship between SPM-A and SPA. However, it is worth noting that when SPA was predicted from PP, controlling for SPM-A, the relationship was almost 60% more effective than when SPM-A was not being controlled.

Therefore, in light of the present findings, hypothesis 2 is only partly accepted, in that this sample of control-oriented parents became more ego-defensive and felt only slightly more pressure, and thus reported higher levels of sport parental anger. In addition, this sample of autonomy-oriented parents reported slightly lower levels of sport parent anger, due to the weak suppressor effect of ego-defensiveness. However, perceived situational pressure had little or no bearing on the reported levels of sport parent anger for the autonomy-oriented parents of this sample.

Hypothesis 3: Sport parent motivation will have indirect effects on sport parent aggression, as measured by level of aggressive actions and by subjective response to aggression. These indirect effects are mediated by situational motivation (perceptions of pressure and ego-defensiveness), and, subsequently, sport parent anger.

Since sport parent anger (SPA) had significant relationships with both ego-defensiveness (ED) and perceived pressure (PP), separate analyses were performed for each to test SPA as a mediator of the relationships between ED and sport parent aggression, as well as PP and sport parent aggression.

First, the effect of SPA as a mediator on the relationship between ED and subjective response to aggression (SRA) was examined. Conditions 1 and 2 were met with ED significantly related to SRA, $r(339) = .16$, $p < .01$, Table VII, and to SPA, $r(339) = .48$, $p < .001$, Table VII. Condition 3 was also met with SPA predicting SRA, $t(1,336) = 3.58$, $p < .001$, $\beta = .22$ (Appendix H), after controlling for ED. Condition 4 also was satisfied, meeting the requirements of full mediation with ED no longer statistically significant $t(1,336) = .86$, *ns*, $\beta = .05$, $\Delta = .11$, (Appendix H), after controlling for SPA. A modification of the Sobel (1982) test (Kenny, et al, 1998) confirmed that this reduction was statistically significant, $z = 4.12$, $p < .001$. This indicated that parents who reported higher levels of ego defensiveness also reported higher levels of sport parent anger. This, in turn, led the parents who reported higher levels of ego defensiveness to report higher levels of subjective response to aggression, as a result of the mediating effect of the anger.

The same approach was taken to examine SPA as a mediator between ED and aggressive actions (AA). Conditions 1 and 2 were met with ED significantly related to

AA, $r(340) = .16$, $p < .01$, Table VII, and to SPA, $r(340) = .54$, $p < .001$, Table VII. Condition 3 was also met with SPA predicting AA, $t(1,337) = 11.59$, $p < .001$, $\beta = .60$ (Appendix I), after controlling for ED. Condition 4 also was satisfied, meeting the requirements of partial mediation with ED statistically significant $t(1,337) = -2.46$, $p < .05$, $\beta = -.13$, $\Delta = .29$, (Appendix I), after controlling for SPA. A modification of the Sobel (1982) test (Kenny, et al, 1998) confirmed that this reduction was statistically significant, $z = 7.62$, $p < .001$. This indicated that parents who reported higher levels of ego defensiveness also reported higher levels of sport parent anger. This, in turn, led the parents who reported higher levels of ego defensiveness to report higher levels of aggressive actions, as a result of the mediating effect of the anger.

Next, the effect of SPA as a mediator on the relationship between PP and subjective response to aggression (SRA) was examined. Conditions 1 and 2 were met with PP significantly related to SRA, $r(339) = .16$, $p < .01$, Table VII, and to SPA, $r(339) = .32$, $p < .001$, Table VII. Condition 3 was also met with SPA predicting SRA, $t(1,336) = 3.79$, $p < .001$, $\beta = .21$ (Appendix J), after controlling for PP. Condition 4 also was satisfied, meeting the requirements of partial mediation with ED slightly less statistically significant $t(1,336) = 1.67$, $p < .01$, $\beta = .09$, $\Delta = .15$, (Appendix J), after controlling for SPA. A modification of the Sobel (1982) test (Kenny, et al, 1998) confirmed that this reduction was statistically significant, $z = 3.62$, $p < .001$. This indicated that parents who reported higher levels of perceived pressure also reported higher levels of sport parent anger. This, in turn, led the parents who reported higher levels of perceived pressure to report higher levels of subjective response to aggression, as a result of the mediating effect of the anger.

Lastly, the effect of SPA as a mediator on the relationship between PP and aggressive actions (AA) was examined. Conditions 1 and 2 were met with PP significantly related to AA, $r(339) = .22$, $p < .001$, Table VII, and to SPA, $r(339) = .32$, $p < .001$, Table VII. Condition 3 was also met with SPA predicting AA, $t(1,337) = 10.82$, $p < .001$, $\beta = .52$ (Appendix K), after controlling for PP. Condition 4 also was satisfied, meeting the requirements of full mediation with ED no longer statistically significant $t(1,337) = 1.08$, *ns*, $\beta = .05$, $\Delta = .17$, (Appendix K), after controlling for SPA. A modification of the Sobel (1982) test (Kenny, et al, 1998) confirmed that this reduction was statistically significant, $z = 5.43$, $p < .001$. This indicated that parents who reported higher levels of perceived pressure also reported higher levels of sport parent anger. This, in turn, led the parents who reported higher levels of perceived pressure to report higher levels of aggressive actions, as a result of the mediating effect of the anger.

Hence, the aforementioned findings indicated that SPA mediated each of the relationships between the situational motivation variables (ED and PP) and the variables that comprised the sport parent aggression factor (SRA and AA). Combined with the previous findings (hypotheses 1 and 2), we partially accept hypothesis 3 in that this relationship is only significant for the path model that stipulates control-oriented parents reported more subjective aggression and more aggressive actions, as a result of becoming more ego-defensive, and subsequently, reported higher levels of anger. Conversely, the combined findings revealed that autonomy-oriented parents reported less subjective aggression and less aggressive actions, as a result of the suppression effect of becoming less ego defensive, and subsequently, reported lower levels of anger. Even though perceived pressure had a weak moderate correlation with sport parent anger, the path

analysis indicates that this situational motivation factor has little or no mediating effect on either of the sport parent motivation factors (i.e., control and autonomy trait orientations).

Model Fit

The overall fit of the theoretical model was tested with EQS 6.1 (Bentler, 2004). Subjective response to aggression (SRA) and aggressive action (AA) were specified as indicators of a latent variable – sport parent aggression. Due to the diverse nature of the mediating effects of ego defensiveness on each of the trait motivation factors, the control-orientation (SPM-C) and the autonomy-orientation (SPM-A) factors of sport parent motivation were entered into the model separately. Utilizing the covariance matrix and adjusting the error covariances, as suggested by the Lagrange Multiplier test, the model for SPM-C fit the data well, $\chi^2(5,335) = 12.94$, $p = .02$, LISREL Goodness of Fit Index (GFI) = .988, Comparative Fit Index (CFI) = .974, Root Mean-Square Error of Approximation (RMSEA) = .068. Standardized regression weights are presented in Figure 2. All of the paths were significant at $p < .05$, with the exception of the path from SPM-C to sport parent anger (SPA) and the path from SPM-C to perceived pressure (PP).

Furthermore, utilizing the covariance matrix and adjusting the error covariances, as suggested by the Lagrange Multiplier test, the model for SPM-A also fit the data well, $\chi^2(5,N=335) = 5.50$, $p = .36$, LISREL Goodness of Fit Index (GFI) = .995, Comparative Fit Index (CFI) = .998, Root Mean-Square Error of Approximation (RMSEA) = .017. Standardized regression weights are presented in Figure 3. As in the previous model, all of the paths were significant at $p < .05$, with the exception of the path from SPM-A to sport parent anger (SPA) and the path from SPM-A to perceived pressure (PP).

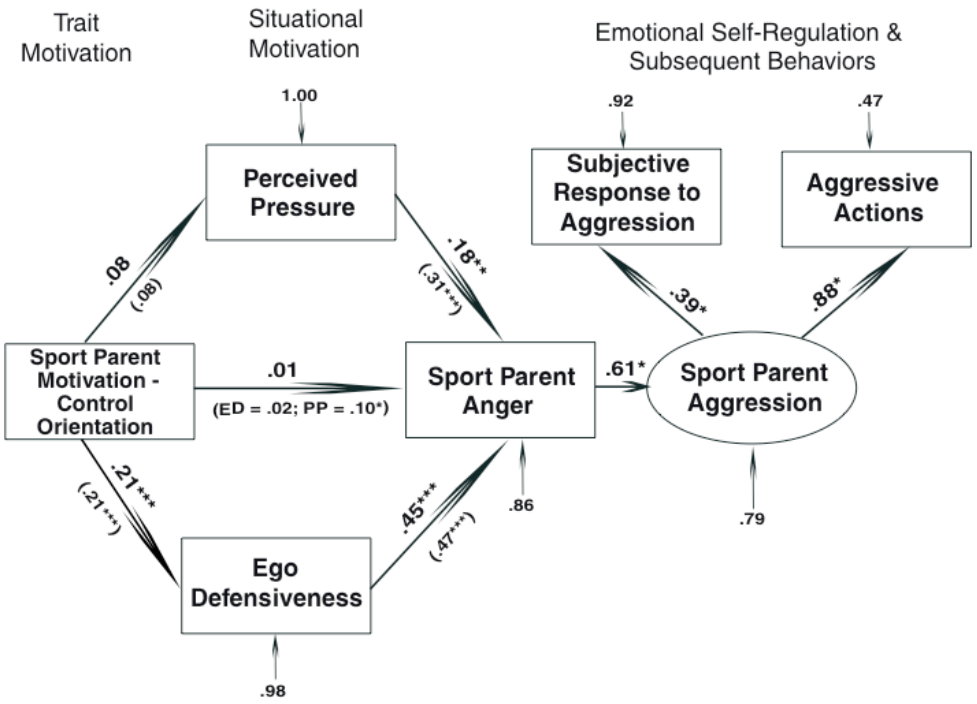

Figure 2 Standardized path coefficients for control-orientation motivational model of sport parent "sideline rage"
(Standardized regression coefficients)

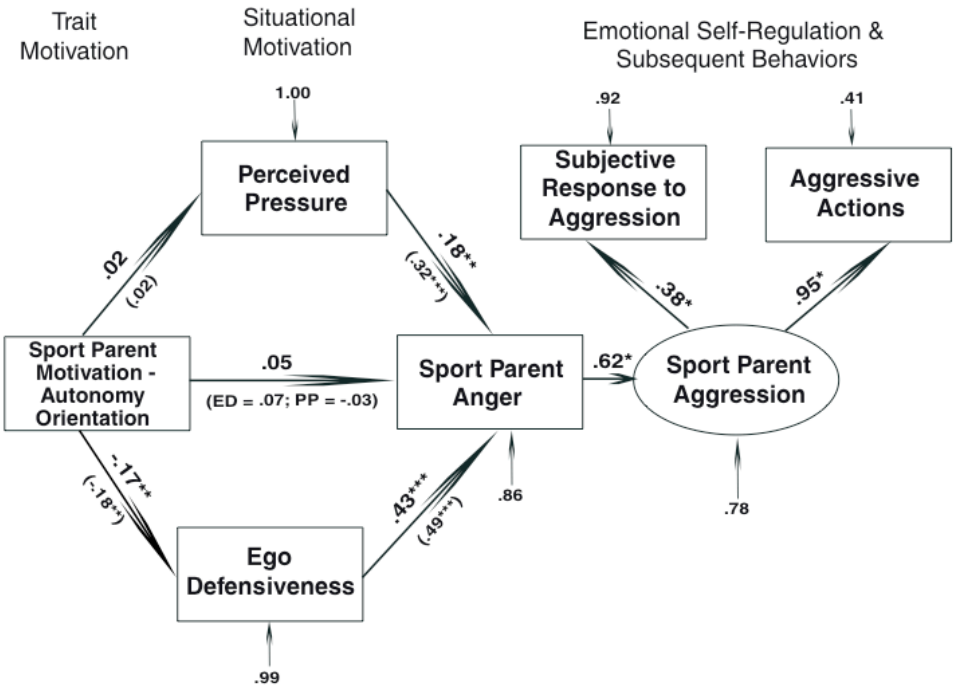

Figure 3 Standardized coefficients for autonomy-orientation motivational model of sport parent "sideline rage" (Standardized regression coefficients)

Chapter 5

Discussion

Summary

The present research provided a rich description of anger and aggression as they occurred among parents while watching their children play soccer. In addition, the present research provided support for extending a theoretical motivational model for understanding anger and aggressive behavior into another domain, that of the sports spectator. Overall, the results support the proposed paradigm, with at least partial support for all three hypotheses.

The first hypothesis received partial support in that only the controlled orientation was directly associated with feeling more sport parent anger, and that this relationship was only mediated by how personally the parents perceived the anger-inducing event to be directed at themselves or their child, but not by the amount of pressure the parent perceived. Consistent with the second hypothesis, and previous research, individuals higher in controlled orientation reported taking anger-inducing events more personally and feeling somewhat more pressure, and, subsequently, reported becoming angrier. Also consistent with the second hypothesis, and previous research, individuals higher in autonomy orientation reported less ego-defensiveness and, subsequently, reported lower levels of sport parent anger. On the other hand, perceptions of situational pressure had little or no impact on parents higher in autonomy orientation. Consistent with the proposed motivational framework, the relationship between ego-defensiveness and sport parent aggression was in a large part due to the mediating effects of sport parent anger on this relationship. Based on the multiple regression analysis, the variance accounted for by

this relationship, in regards to aggressive actions, was 30%. Similarly, the relationship between sport parent motivation and sport parent anger was in a large part due to the mediating effects of ego-defensiveness on this relationship. Correspondingly, the variance accounted for by this relationship, via multiple regression analysis, was 23%. Hence, individuals higher in controlled orientation reported higher levels of sport parent aggression, as measured by more aggressive actions and more aggressive feelings about those actions. Furthermore, the research suggests that this relationship was mediated by increased perceptions of anger-inducing events to be directed at themselves or their child which then led to higher reported levels of sport parent anger. Also consistent with the proposed motivational framework, individuals higher in autonomy orientation reported lower levels of sport parent aggression, as measured by less aggressive actions and less aggressive feelings about those actions. Moreover, the research suggests that this relationship was mediated by fewer perceptions of anger-inducing events to be directed at themselves or their child, which then led to lower reported levels of sport parent anger.

Discussion

The findings complement and extend previous work on anger and aggression within the framework of self-determination theory. Whereas previous research examined the impact of motivation at multiple levels on driving anger and aggression (Knee, et al, 2001; Neighbors, et al, 2002), the present research is unique in extending the previous model into the context of sports by examining the impact of motivation at multiple levels on anger and aggression among parents watching their children play soccer. Secondly, whereas the aforementioned research only examined a single level of the trait motivation variable (controlled orientation), the present research examined the two theoretically

orthogonal levels of trait motivation (controlled and autonomy orientations). Thirdly, whereas the previous research examined the levels of anger and aggression as an active agent, the present research is unique in that it examined the levels of those factors in a highly identified spectator. Lastly, whereas the previous research has examined hypothetical instrumental aggressive behaviors in highly-identified spectators of professional and collegiate sporting events, the present research examines these reactive aggressive behaviors in highly-identified spectators of youth sports (i.e., parents).

Given the differences in contexts, the findings are remarkably consistent with previous research focusing on "road rage" (Neighbors, et al, 2002), in that ego-defensiveness was strongly associated with anger and subsequent aggression in both contexts. "Specifically, viewing the events as being personally directed at the self (or their child) was associated with higher levels of anger and subsequent aggression," (Neighbors, et al, 2002, p. 331). Consistent with this research, the effects related to ego-defensiveness appeared to be substantially larger than the effects related to feeling pressured or stressed. However, contrary to the previous research, the present study found that feeling pressured or stressed was moderately associated with sport parent anger and did translate into more aggressive actions. Hence, even though perceived pressure did not mediate the relationship between trait motivation and anger, increased perceptions of pressure and stress led parents to become angrier and, subsequently, more aggressive in their actions.

Perhaps, this difference can be explained by the inherent social nature of youth sports, as compared to the functional utility of driving a vehicle. Or perhaps this difference is a reflection of the role of the actor within the two contexts. While driving a

vehicle, the actor is an active agent cognitively processing many cues to perform the task of driving. Hence the agent should be less aware of non-relevant stressors. On the other hand, the role of a spectator at a sporting event is comparatively less cognitively demanding. Hence, in this context, the agent may be slightly more cognizant of perceptions of pressure and stress.

Consistent with the previous study (Knee, et al, 2001), the present research found similar associations between trait motivation constructs and anger (i.e., controlled orientation was positively related and autonomy orientation was negatively related), as well as the mediating effects of anger on the relationship between the controlled orientation and aggressive actions. "In other words, a control orientation may influence how one interprets the actions of others leading to anger, which in turn influences an aggressive retaliation (directed toward) the (perceived offender)" (Knee, et al, 2001, p. 900). To illustrate, those parents who are higher in controlled orientation and tend to regulate their emotions incompletely, are more apt to become angry at potentially coercive actions of referees, and proceed to yell or make gestures directed towards them as an attempt to retaliate. Or worse yet, those parents who are higher in controlled orientation tend to become angry at perceptions of lack of effort or perceived errors made by their own children, which in turn influences the type of evaluative feedback the child receives from the parent. Over a period of time, this may turn a supposedly enjoyable, positive learning environment into a negative one filled with stress, anxiety, and contempt.

It can be argued that no spectator in a sporting event is more highly identified with a team than a parent watching his or her own child play. Thus, consistent with the

previous studies (Russell & Baenninger, 1996; Wann, et al, 1999), the present research found that more than half of the parents sampled reported becoming somewhat angry while watching their children play soccer and, subsequently, reported slight to moderate aggressive behaviors.

However, in contrast to the previous literature in which the targets of the hypothetical instrumental aggression for highly-identified spectators were a player or coach for a rival team (Russell & Baenninger, 1996; Wann, et al, 1999), the present study identified that most frequent targets of the actual reactive aggression for highly-identified spectators were the referee, their own child, their child's team. Furthermore, the targets of the aggressive actions respectively corresponded to sources of the provocation – the referee, their own team's play, the opponents' discourteousness or remarks. Although the acts of aggression in the present study are not mutually exclusive to either typology (instrumental or reactive), the fact that these actions were a result of some form of provocation that induced anger lends theoretical credence to categorize these behaviors as stemming from reactive aggression. It is worth noting that approximately 13% of the parents who reported becoming mad or angry partook in no aggressive actions. Based on the present study, one might surmise that that these parents' trait motivational levels would be relatively higher in the autonomy orientation and lower in the control orientation – hence, more able to exhibit emotional self-regulation. However, further examination of this data is warranted before such inferences can be made.

Thus, given the theoretical framework model, it is plausible that the highly-identified, control-oriented parent (i.e., highly ego-involved and highly susceptible to become ego-defensive) is more likely to become angry and, subsequently, display more

aggressive behaviors as compared to the highly-identified, autonomy-oriented parent. What happens when that child's performance falls below the parents' expectations? It is tenable that the highly-identified, control-oriented parent will be more likely to direct their aggressive behaviors at their own child (or child's team). Ultimately, the child's perceptions of these behaviors could have a detrimental impact that child's motivation for continued participation in the sport, self-efficacy, and self-esteem.

All in all, these results suggest that "sideline rage," although generally of brief duration and slight intensity, is more often caused by perceiving actions on the soccer pitch as personal affronts (directed at oneself or towards one's child) and, subsequently, reacting in a fashion to preserve one's self-esteem, rather than being caused by perceptions of stress or pressure. These findings are consistent with previous research suggesting that aggression stems from emotional reactivity (Caprara et al, 1994), situational (instigators or inhibitors) and personological (the propensity or preparedness to aggress) factors (Anderson & Huesmann, 2003), perceived threats to self-esteem (Baumeister et al, 2000), and social identity (Tedeshi & Felson, 1994).

These findings of the present study are also in agreement with self-determination theory, which has shown controlled orientation to be associated with ego-defensive and reactive behavior (Hodgins & Knee, 2002). Self-determination can be defined as "actively choosing behaviors based on one's integrated and core values. Defensively reacting to perceived threats or challenges to one's ego based on feelings that one's ego is threatened or challenged are at the other end of the continuum" (Neighbors, et al, 2002). Similar to previous research that has examined behavioral consequences of self-determination, the results suggest there are important consequences associated with

approaching situations in an ego-involved manner and with perceiving pressure from one's environment. Congruent with Neighbors et al (2002) study on "Road Rage," the present study suggests that it is the ego-involvement component that plays the larger role, being strongly associated with anger, aggressive actions, and subjective response to those actions.

The present research extends self-determination theory by further evaluating the definition of the controlled orientation construct (in terms of two theoretically distinguishable aspects: ego-defensiveness and pressure) in a domain other than driving a car, in which they were originally created and tested (Neighbors et al., 2002). The findings also concur with Vallerand's (1997) multiple level paradigm, in that a better understanding of behavior can best be achieved by through examination of global, contextual, and situational motivational levels.

Limitations

The theoretical framework received strong support, but it is important to identify some of the limitations associated with the methodology used. First, the sample, although random, consisted of a fairly homogeneous group of parents of youth soccer players in the Mid-Atlantic region and may not be representative of a more general sample. Furthermore, given the unique contextual aspects of soccer, the results may not be representative of the social dynamics of other types of youth sports. Additional limitations concern the influence of social desirability on the self-report measurements of anger, feeling pressure, ego-defensiveness, and aggressiveness. However, it is tenable that self-report measurements might actually underestimate the number of recorded anger-inducing events if physiological and /or observational measurements were utilized.

In addition, reports of anger and responses to anger were recorded at the same time, possibly resulting in inflated correlations among them. Moreover, since the questionnaires were administered in the field with a limited amount of time to explain the detailed directions, the level of education and verbal abilities of the parents may have influenced their answers to some of the questions. Lastly, even though it was explained to each participant, the conceptualization of an anger continuum (ranging from "a bit irate – the hair on the back of your neck stood up" to "fuming mad") may have been a limiting factor in how some parents completed the questionnaire. Despite these limitations, the pre-post game, self-report methodology has advantages over other methods of studying anger and aggression in this context in that the events that participants respond to are actual events that they experienced in that location, rather than vignettes where they must imagine both a particular situation as well as how they would respond in that situation. Furthermore, in contrast to Neighbors, et al (2002), the actual time of the participants' recording their behaviors was immediately following the soccer, minimizing the effects of time lapse on memory recall, especially for emotional-related measurements.

Conclusions

Given that sport parent anger, stress, and aggression have been associated (at least anecdotally) with verbal abuse, physical assaults, melees, and, at least, one death, it is surprising and unfortunate that there continues to be a dearth of research in this area. The lack of attention might be understandable if becoming angry while watching your child play sports was a relatively rare occurrence, but this does not appear to be the case. In the present study, at a random sampling of youth soccer games, more than half of the participants reported incidents of sport parent anger. Furthermore, even though the

general levels of intensity and duration were slight, the anger was almost always associated by some type of behavioral response, which varied from muttering to oneself to more confrontational responses such as walking towards the field of play and yelling at the referee. Of the parents who admitted to becoming angry, it is of no surprise that the referee provoked more than one-third (35.6%) of those incidents. However, surprisingly, slightly more than one in four (28.3%) of the parents who reported becoming angry did so as a result of their child's performance, or the performance of their child's team. What does this suggest about the overall ability of parents to respect the decisions of officials and to adopt a developmental perspective to their child learning to play a sport?

In addition to results described herein, a number of interesting observations were made in perusing open-ended descriptions of anger-inducing events that may provide avenues for future research on sport parent anger and aggression. First, the vast majority of aggressive responses reported were moderate in comparison to the extreme incidents often cited in the media, but even in this relatively small sample, we observed a report of an individual admitting to "going over and having a few choice words" with the opposing coach over the physical style of play by that team (regardless of the referees calling the fouls). Another observed report cited a wife becoming "so angry at her husband's ranting and yelling at their daughter" that she drove away in the family car to get some coffee. The observations also revealed some interesting issues that youth soccer administrators are starting to combat: 1) referees and rules; 2) sportsmanship; and 3) child and team performance

The majority of responses concerning the referees revolved around two issues: a perceived misinterpretation of the "off-sides" rule and a perceived lack of consistency in

calling fouls. To combat the former issue, the United States Youth Soccer Association (USYSA) has created and disseminated a video that explains this complex rule. It is used mainly in the training of referees, but is also available to soccer teams through their local leagues and clubs. However, it seems that education on this subject is still necessary, especially in regards the parents.

In regards to sportsmanship (or more specifically – the lack of sportsmanship), the majority of the responses involved the remarks from opposing coaches or parents who "took the game too seriously." Reminiscent of the Danny Almonte situation in Little League baseball, several parents (presumably on the same team) were observed to have cited a team playing with "over-aged" players. There are a growing number of youth sports organizations that require parents and coaches to sign a "Code of Conduct" as a means to educate them on acceptable behaviors and promote sportsmanship. It is worth noting that the majority of the observations took place in a soccer league in which both teams are graded by the referees on a fifteen-point scale (five points each for the conduct of the coach, players, and parents). At the end of the season, the team with the most sportsmanship points gets a free team outing to a professional soccer team game.

Lastly, there were a surprising number of observed responses that involved parents becoming angry with their own child or their child's team for a perceived lack of effort or focus and, subsequently, yelling at them. For example, one respondent reported becoming angry because "my daughter wasn't hustling after the ball," whereas another parent reported becoming angry because "the team wasn't doing what they have been practicing."

Implications and Future Directions

The findings suggest a number of possible interventions strategies for reducing sport parent anger and associated aggression as well as possible directions for future research. First, the study demonstrated that less self-determined (i.e. control-oriented) parents might be particularly prone to experience anger in this context. This suggests that a possible screening criteria for identifying parents who are at higher risk for experiencing "sideline rage." Second, although some organizations, such as the Parents Alliance for Youth Sports, have created educational awareness programs to promote positive behaviors in this domain, the finding that perceiving events as directed at oneself or one's child was associated with higher levels of anger and, subsequently, more aggression suggests the need to incorporate an anger awareness module in their curriculum. Third, research has shown that relaxation techniques, such as deep breathing and progressive muscle relaxation (PMR), have been successful anger management skills. The findings of this study suggest that parents, as well as their children, might benefit from learning these skills together. For the parents, especially those who are control-oriented, these skills could be employed when certain events trigger the anger response. For their children, these skills would assuage potential performance anxiety and help the athlete achieve an optimal mental performance state for learning and playing.

In addition, following the latter train of thought, it is tenable that incorporating attribution processes may account for additional variance. In particular, as in other conflict situations (Betancourt & Blair, 1992; Weiner, 1985), does perceived controllability and intentionality mediate the anger experienced in response to events that transpire in the youth sports field of play? Furthermore, another logical perspective

would suggest that incorporating utility value might account for additional variance. Specifically, as in other achievement situations (Eccles, 1983), do parental expectations mediate ego-defensiveness and, subsequently, the anger experienced in response to events on the youth sports field?

An additional tangent for future studies would be to incorporate less biased measurements of anger, such as psychophysiological instruments. Specifically, as in other emotional recognition situations (Nasoz, Alvarez, Lisetti & Finkelstein, 2003), the use of a BodyMedia SenseWear™ armband to gather measurements of galvanic skin response (GSR), heart rate, and temperature would allow for objective measurements of anger to be inferred based on processing the physiological data through reliable algorithms.

Appendix A

Instructions for Completing the Sport Parent Behavior Questionnaires

It is important that you understand that you are not just subjects in some research experiment. **Rather, you are co-investigators** in exploring an important phenomenon (sport parent behaviors) that has received surprisingly little attention.

The goals of this research project are: 1) To examine parents when they are spectators at their children's sports events; 2) What kinds of events most often cause certain emotional reactions in those spectators; and 3) Responses to those emotions. Whether we are able to achieve these goals is largely dependent on you and your willingness report as accurately as possible any incident that creates the designated emotional reaction you experience (for today's co-investigators - what made you mad or angry?).

The research project is divided into four (4) sections: 1) Descriptive Questions; 2) General Questions (related to areas other than sports); 3) Sport Parent Behavior Record; and 4) Brief Follow-up Questionnaire. We thank you in advance for being part of this study and helping us to gain a better understanding of the sport parent behaviors.

Before continuing, please answer the following descriptive and general questions to assist us in organizing our results (**Sections 1 and 2)**. It is important to understand that **your anonymity will be maintained**. In order to do so, we ask that you establish and use a code as follows: **the code consists of the first three letters of you mother's maiden name and your birthday date (6 digits)**. For example, if your mother's maiden name was Jane Smith, and you were born on June 15, 1962 - your code will always be the same 9-character identification code (e.g., smi061562). Please ensure that your code appears on every page of the questionnaire.

Section 1: Descriptive Questionnaire

CODE: _____
(e.g., smi061562)

1. Your Gender: ❑ Male ❑ Female

2. Your Age: ❑ > 20 ❑ 20-29 ❑ 30-39 ❑ 40-49 ❑ 50-59 ❑ 60-69 ❑ < 70

3. Your Marital Status: ❑ Single (Never Married) ❑ Single (Divorced or Separated) ❑ Married

4. Your Ethnicity: ❑ African American ❑ Asian American ❑ Caucasian (EuroAmerican) ❑ Latin American ❑ Native American ❑ Other_____

5. Your Level of Education:
❑ Some High School ❑ 4 years of High School ❑ Some College or Technical Training ❑ 4 years of college ❑ Graduate (Master's) ❑ Graduate (PhD or Professional Degree)

6. Your Estimated Household Income:
❑ less than $25,000 ❑ 25,000 - 49,999 ❑ 50,000 - 74,999 ❑ 75,000 - 99,999 ❑ 100,000 - 124,999 ❑ 125,000 - 149,999 ❑ more than 150,000

7. Your County of Residence: ❑ Anne Arundel ❑ Baltimore City ❑ Baltimore County ❑ Carroll ❑ Charles ❑ Frederick ❑ Howard ❑ Montgomery ❑ Prince George's ❑ Alexandria ❑ Fairfax ❑ Arlington ❑ Loudoun ❑ Prince William ❑ Stafford ❑ District of Columbia ❑ Other_____

8. The Number of Children in Your Family:
❑ 0 ❑ 1 ❑ 2 ❑ 3 ❑ 4 ❑ 5 or more

9. The Age of Eldest Athlete in Your Family:
❑ 6-7 ❑ 8-9 ❑ 10-11 ❑ 12-13 ❑ 14-15 ❑ 16-17 ❑ 18+

10. **How much does the child you are watching today like participating in sports?**
not at all 1 2 3 4 5 6 7 very much

11. **How important is sports to this child?**
not at all 1 2 3 4 5 6 7 very much

12. **How important is it to you that this child do well in sports?**
not at all 1 2 3 4 5 6 7 very much

Section 2: General Questionnaire

These items pertain to a series of hypothetical sketches (lettered A-L). Each sketch describes an incident and lists two ways of responding to it. **Please read each sketch, imagine yourself in that situation, and then ANSWER BOTH RESPONSES**. Think of each response option in terms of how likely it is that you would respond that way. (We all respond in a variety of ways to situations, and probably most or all responses are at least slightly likely for you.) If it is very unlikely that you would respond the way described in a given response, you should circle answer 1 or 2. If it moderately likely, you would select a number in the mid-range, and if it is very likely that you would respond as described, you would circle answer 6 or 7.

CODE: _____

(e.g., smi061562)

A. You have been offered a new position in a company where you have worked for some time. The first question that is likely to come to mind is:

1. Will I make more at this position?
   very unlikely 1 2 3 4 5 6 7 very likely
2. I wonder if the new work will be interesting.
   very unlikely 1 2 3 4 5 6 7 very likely

B. You have a school-age daughter. On parents' night the teacher tells you that your daughter is doing poorly and doesn't seem involved in the work. You are likely to:

3. Talk it over with your daughter to understand further what the problem is.
   very unlikely 1 2 3 4 5 6 7 very likely
4. Make sure she does the assignments, because she should be working harder.
   very unlikely 1 2 3 4 5 6 7 very likely

C. You had a job interview several weeks ago. In the mail you received a form letter which states that the position has been filled. It is likely that you might think:

5. It's not what you know, but who you know.
   very unlikely 1 2 3 4 5 6 7 very likely
6. Somehow they didn't see my qualifications as matching their needs.
   very unlikely 1 2 3 4 5 6 7 very likely

D. You are a plant supervisor and have been charged with the task of allotting coffee breaks to three workers who cannot all break at once. You would likely handle this by:

7. Telling the three workers the situation and having them work with you on the schedule.
   very unlikely 1 2 3 4 5 6 7 very likely
8. Simply assigning times that each can break to avoid any problems.
   very unlikely 1 2 3 4 5 6 7 very likely

E. A close (same-sex) friend of yours has been moodly lately, and a couple of times has become very angry with you over "nothing." You might:

9. Share your observations with him/her and try to find out what is going on with him/her.
   very unlikely 1 2 3 4 5 6 7 very likely
10. Tell him/her that you're willing to spend time together if and only if he/she makes more effort to control him/herself.
    very unlikely 1 2 3 4 5 6 7 very likely

F. You have just received the results of a test you took, and you discovered that you did very poorly. Your initial reaction is likely to be:

11. "I wonder how it is that I did so poorly," and feel disapppointed.
    very unlikely 1 2 3 4 5 6 7 very likely
12. "That stupid test doesn't show anyrthing," and feel angry.
    very unlikely 1 2 3 4 5 6 7 very likely

G. You have been invited to a large party where you know very few people. As you look forward to the evening, you would likely expect that:

13. You'll try to fit in with whatever is happening in order to have a good time and not look bad.
    very unlikely 1 2 3 4 5 6 7 very likely
14. You'll find some people with whom you can relate.
    very unlikely 1 2 3 4 5 6 7 very likely

H. You are asked to plan a picnic for yourself and your fellow employees. Your style for approaching this project could most likely be characterized as:

15. Take charge: that is, you would make most of the major decisions yourself.
    very unlikely 1 2 3 4 5 6 7 very likely
16. Seek participation: get inputs from others who want to make them before you make the final plans.
    very unlikely 1 2 3 4 5 6 7 very likely

I. Recently a position opened up at your place of work that could have meant a promotion for you. However, a person you work with was offered the job rather than you. In evaluating the situation, you're likely to think:

17. The other person probably "did the right things" politically to get the job.
    very unlikely 1 2 3 4 5 6 7 very likely
18. You would probably take a look at factors in your own performance that led you to be passed over.
    very unlikely 1 2 3 4 5 6 7 very likely

J. You are embarking on a new career. The most important consideration is likely to be:

19. How interested you are in that kind of work.
    very unlikely 1 2 3 4 5 6 7 very likely
20. Whether there are good possibilities for advancement.
    very unlikely 1 2 3 4 5 6 7 very likely

K. An employee who works for you has generally done an adequate job. However, for the past two weeks his/her work has not been up to par and he/she appears to be less actively interested in his/her work. Your reation is likely to be:

21. Tell him/her that their work is below what is expected and that he/she should start working harder.
    very unlikely 1 2 3 4 5 6 7 very likely
22. Ask him/her about the problem and let him/her know you are available to help work it out.
    very unlikely 1 2 3 4 5 6 7 very likely

L. Your company has promoted you to a key position in a city far from your present location. As you think about the move you would probably:

23. Feel interested in the new challenge and a little nervous at the same time.
    very unlikely 1 2 3 4 5 6 7 very likely
24. Feel excited about the higher status and salary that is involved.
    very unlikely 1 2 3 4 5 6 7 very likely

Instructions for Completing Sport Parent Behavior Records

It is important that you understand that you are not just subjects in some research experiment. **Rather, you are co-investigators** in exploring an important phenomenon (sport parent behaviors) that has received surprisingly little attention.

We are providing you with a detailed set of instructions for completing the sport parent behavior records. We encourage you to refer to the instructions any time you have questions about how to fill out the record. In addition, we will guide you though a couple of examples in hopes of eliminating most questions that are likely to arise.

For today's game, you will be keeping track of the **MOST NOTABLE OCCURRENCE OF BECOMING MAD *(EVEN IF IT'S JUST A LITTLE BIT)* OR ANGRY** you experience while you are watching your son or daughter play soccer. It is important that you do your best to keep track of the incident you experience regardless of whether it is minor or severe. If you do not become mad or angry, then you will turn a record stating you experienced none that day. This will let us know that you didn't simply forget to keep track that day. On some days you may become more mad or angry than on other days, **SIMPLY FILL OUT ONE RECORD FOR THE MOST NOTABLE OCCURRENCE**.

When should you complete the record?

You should complete a record at the conclusion of the game! Take a few minutes to complete the record while the event is still fresh in your mind. ***Only complete the record for events that actually cause you to become mad or angry even if it's just a little bit.*** If someone does something you don't like or if the game impedes your social schedule but you don't feel mad or angry about it, then this is not an incident caused by becoming mad or angry and you shouldn't complete a record for it.

Record identification information:
The top line of each record contains four (4) blanks and five (5) additional boxes for you to fill out information that will help us keep track of the records. It is essential that you do not leave these items blank, as we will have no way to know when the events occurred or who experienced them.

Date: Put the date for when the event occurred that caused you to become angry (e.g., 3-20-03)

Time event occurred: Be sure to note the time your child's game began, again circling either am or pm. Also, make sure you circle either am or pm so we know which part of the day the event occurred during. (e.g., 10:15 am).

Time record was completed: Be sure to note the time when you actually complete the record, again circling either am or pm. This will help us determine how soon after the event occurred the record was completed (e.g., 10:50 am).

Code: It is essential that you complete the code blank. If you don't we will have no way of matching up your records and we will not be able to assign you extra credit for keeping records that day. The code consists of the first three letters of you mother's maiden name and your birthday date (6 digits). Thus your code will always be the same 9-digit identification (e.g., smi061582). We are using this code system so you will not have to put your name on anything you turn in and your identity will remain anonymous.

Competition group: Please check the appropriate level of competition that your child's team is playing during their regular league games. For the purpose of this study, we are utilizing the following definitions for competition groups:

* **Recreation Team:** A recreation team that competes in a recreational league. There are no tryouts for the team. There is a minimum requirement of playing time for athletes.
* **Classic Team:** A competitive, developmental division between club/travel and recreation. Tryouts are used to form teams and there is no minimum requirement of playing time for athletes.
* **Club/Travel Team:** A competitive division with up to 5 levels of play in which teams play at various sites and tournaments. Tryouts are used to form teams and there is no minimum requirement of playing time for athletes.

Gender of the child: Please check the box that corresponds to the gender of the child you are watching (e.g., if you are watching your daughter play, then you should check the box for daughter's team - even if she plays on a coed team).

Instructions for Completing Sport Parent Behavior Records

Age division: Please check the box that corresponds to the appropriate age grouping of the child you are watching. For the purpose of this study, we are utilizing the following 2003-2004 USYSA age divisions:

U-06 = Born Aug. 1, 1997 or later
U-08 = Born Aug. 1, 1995 or later
U-10 = Born Aug. 1, 1993 or later
U-12 = Born Aug. 1, 1991 or later
U-14 = Born Aug. 1, 1989 or later
U-16 = Born Aug. 1, 1987 or later

Time of game when event occurred: Try to note the relative time in the game when you found yourself becoming mad or angry so it will be easier to remember when you complete the record. Please check the appropriate box for the corresponding half of the game (e.g. 1st half).

Score of event when event occurred: Try to note the score of the game when you found yourself becoming mad or angry. Please check the appropriate box for the corresponding score of the game (e.g. your child's team has 3 goals, while the opponents have 2 goals - hence, you would check the box for "Team is winning").

WHAT MADE YOU MAD OR ANGRY?
There are 6 items in this section that address the event that caused you to become angry.

1. **Briefly describe what caused you to become mad or angry.** This item gives you the chance to tell us exactly what happened. You don't need to write a whole page here. Probably you can give an adequate description in a sentence or two. If you feel you need more space to describe the event you are welcome to write on the back of the record.

Examples:

* I was trying to get to my other child's game, but this game started too late. They made me miss the first half of his/her game.
* The opposing team was playing very physically and wouldn't back off, even after the referee warned them.
* The team never passed the ball to my child.
* The coach didn't give my child enough playing time.

2. Specifically what was it that made you this way? This item will help us categorize the kinds of things that tend to make people angry when they are driving. You might circle more than one of these for some events (e.g., e.g. your child is deliberately pushed by an opponent, but the referee is on your side of the field and doesn't blow the whistle for a foul - hence, this could be categorized as being illegal play, as well as referee presence)

(Mark all that apply.)

* **hostile remarks/gestures:** You would check this item if the thing the thing that caused you to become mad or angry were someone making a negative (or derogatory) remark or gesture (e.g., yelling at your child or another athlete, use of rude or profane language and/or gestures, encouraging aggressive play to intentionally hurt a player, etc.).
* **opponents discourteous:** Check this if the opponents were being discourteous (e.g., inadvertently pushing or tripping your child or a teammate, playing physically aggressive, display poor sportsmanship, etc.).
* **referee:** Check this if your becoming mad or angry was caused by a referee, umpire, or official (e.g., a referee is not calling "obvious" fouls, a referee doesn't make an offsides call, a referee is within the sound of your voice, etc.).
* **illegal play:** Check this if you got mad or angry because a player violates the rules of the game (e.g., someone is deliberately pushed or held, someone is fouled, but the referee does not make a call, etc.).
* **own team's play:** Check this if you got mad or angry because of the play of your son or daughter's team (e.g., teammates don't pass to your son or daughter, team mates aren't as skilled players as your child, your child or their teammates make numerous mistakes, etc.).
* **coach:** Check this if you got mad or angry because of an action(s) taken by either team's coach (e.g., your child does not start the game, your child is pulled out of the game, your child deserves more playing time, the opposing team's coach is not substituting fairly, etc.).
* **other:** If the event that caused you to become mad or angry does not fit any of the above describe categories, try to think of your own category that it would fit under and write it in the blank provided.

3. To what extent did you perceive this action as being directed at you personally? Circle the number here that best represents the extent to which you think the thing that caused you to get mad or angry was aimed at you personally.

4. To what extent did you perceive this action as being directed towards your child? Circle the number here that best represents the extent to which you think the thing that caused you to get mad or angry was aimed at your child.

5. How angry did you become? If you just got a little bit mad you might circle 1 or 2 here. If you were really fuming you would probably circle a 6 or 7.

6. Approximately how long did your anger last? You will probably find that sometimes your anger lasts longer than other times. Just circle your best estimate of how long your anger lasted before you were totally over it.

Instructions for Completing Sport Parent Behavior Records

HOW WERE YOU FEELING BEFORE THE INCIDENT THAT CAUSED YOU TO FEEL THIS WAY?
Items 7 through 10 are designed to examine your mood and attitude before the event occurred that made you frustrated or angry.

7. To what extent were you in a rush before the game? Circle the number that best represents how much of a rush you were in. If you were not rushing at all circle 1. If you were really rushing even if you didn't need to be circle a higher number.

8. To what extent were you in danger of being late for another function at the point when you became mad or angry? Circle the appropriate number that describes the extent to which you were in danger of being late for another function when the event occurred that caused you to get mad or angry.

9. To what extent were you feeling stress before the incident occurred that caused you to become mad or angry? Circle the number that best reflects how much stress you were feeling before the event occurred regardless of why you were feeling stressed.

10. To what extent were you feeling pressure before the incident occurred that caused you to become mad or angry? Circle the number that best reflects how much pressure you were under before the event occurred regardless of why you were feeling pressured.

HOW DID YOUR ANGER AFFECT YOUR SPECTATORSHIP?
Items 11 and 12 are aimed at determining how your anger affected your driving.

11. To what extent did you watch the game more passively while you were mad or angry? If you felt your becoming mad or angry caused you to watch the game more passively than you were watching before you got angry, circle a higher number. If you felt your becoming mad or angry caused you to watch the game less passively circle a lower number.

12. To what extent did you watch the game more intensively while you were mad or angry? If you felt your becoming mad or angry caused you to watch the game more intensively than you were driving before you got angry, circle a higher number. If you felt your becoming mad or angry caused you to watch the game less intensively circle a lower number.

HOW DID YOU RESPOND TO THE EVENT THAT CAUSED YOU TO BECOME MAD OR ANGRY?
Items 13 through 15 are designed to examine how people tend to respond to events that make them mad or angry while watching the game.

13. What specific responses did you engage in?
You might have more than one response to an event. E.g., If someone did something that made you mad or angry and you yelled, waved your fist, muttered comments, and got out of your seat, you would circle yelling, made gesture(s), muttered comments, and stood up from your seat. **(Mark all that apply.)**

* **made gesture(s):** Gestures include and body movements directed at the thing that made you mad or angry. These might include the middle finger, fist waving, making faces, head nodding, pointing, as well as others.
* **yelling:** Check this if you find yourself yelling or raising your voice at the thing that made you becomie mad or angry. You may or may not be yelling specifically at a particular individual. For example, you might yell in disgust after an opponent's goal "How can you let them take those shots?" On the other hand you might be yelling at another person who had done something to anger you. Circle this even if you do not intend for anyone else to hear you yelling.
* **name calling:** Check this if you call someone a name or names as a result of becoming mad or angry. For example, you might curse players, referees, or coaches for doing something that you did not approve. You might call a player or parent stupid, an idiot, or a geezer, or some other choice name.
* **muttered comments:** Check this if you make derogatory comments about the person or event that made you mad or angry. Check this if your comments are at or below your normal speaking volume. If your voice is raised above normal level check yelling instead.
* **looked away in disgust:** Check this if you averted your eyes away from the area of play as a result of your frustration or anger.
* **stood up from your seat:** If you stood up from your seat as a result of becoming mad or angry, check this response. You might stand up for any number of reasons including trying to get closer to the situation or blocking someone else from getting closer.
* **walked towards the field of play:** If you walked towards the field as a result of becoming mad or angry, check this response. You might walk towards the field for any number of reasons including trying to get closer to the situation or so someone can better hear your comments.
* **walked away from the field of play:** If you walked away from the field as a result of becoming mad or angry. check this response. You might walk away from the field for any number of reasons including trying to get away from the situation or to calm down.
* **encourage others to verbally or physically confront another person:** Check this if you encourage another person retaliate against another person in response to your becoming mad or angry.. E.g., you might tell an athlete to foul their opponent or you might spur on another parent by asking, "Are you going to take that from him / her?"
* **physically confront another person:** Check this if you touch / hit another person in response to becoming mad or angry. E.g., you might poke your forefinger at another parent to let them know you don't appreciate his or her behavior.
* **no action at all:** Check this if you took absolutely no action in response to you becoming mad or angry..
* **other (describe):** If your response to the person or event that made you mad or angry doesn't fit one of the above categories, write in a brief description of your response.

Instructions for Completing Sport Parent Behavior Records

14. Who was the intended target of the specific responses you engaged in?
You might have more than one target to an event. E.g., If someone did something that made you mad or angry and you muttered comments to yourself, yelled at the referee, waved your fist at the opposing team's parents and stood up from your seat, you would write in the appropriate code self (S), referee (R), and opposing team parents (OP) to correspond to their respective responses.

(Fill in the code for all that apply to each response to Question 13)

* **son or daughter (SD):** Use this code if your own child was the intended target of your response.
* **child's teammate (CT):** Use this code if your child's teammate was the intended target of your response.
* **child's coach (C):** Use this code if your child's coach was the intended target of your response.
* **child's team (T):** Use this code if your child's team was the intended target of your response.
* **teammate's parent/fan (P):** Use this code if a parent or other fan of one of your child's teammate was the intended target of your response.
* **referee / official/ umpire (R):** Use this code if the referee, an official, or umpire was the intended target of your response.
* **administrator (A):** Use this code if a league, tournament, or club administrator was the intended target of your response.
* **opposing team's athlete (OA):** Use this code if an athlete on the opposing team was the intended target of your response.
* **opposing team's coach (OC):** Use this code if a coach on the opposing team was the intended target of your response.
* **opposing team (OT):** Use this code if the opposing team was the intended target of your response.
* **opposing team's parent/fan (OP):** Use this code if a parent or other fan on the opposing team was the intended target of your response.
* **self (S):** Use this code if you were the intended target of your response.

15. How aggressive would you rate your response?
Circle a higher number if you think your response was very aggressive and a lower number if you feel your response was not aggressive at all.

16. How passive would you rate your response?
Circle a higher number if you think your response was very passive and a lower number if you feel your response was not passive at all. If you made no response than you would probably circle 7, if you did something that was actively directed at some driver or event, you would probably circle 1.

HOW DID YOUR RESPONSE TO THE SITUATION MAKE YOU FEEL?
Items 17 through 21 are designed to measure how you felt after responding to the person or event that made you mad or angry.

17. To what extent did your response make you feel like you "got even" with the other person?
If you feel like you successfully retaliated against the person or event that made you mad or angry, circle a higher number. If you do not feel this way, circle a lower number.

18. To what extent did you feel good about your response? If you felt good about your response, regardless of whether you think the response was a positive or negative one, circle a higher number. If you did not feel this way, circle a lower number.

19. To what extent did you feel bad about your response? If you felt bad about your response, regardless of whether you think the response was a positive or negative one, circle a higher number. If you did not feel this way, circle a lower number.

20. To what extent did you feel guilty about your response? If you felt guilty about your response, regardless of whether you think the response was a positive or negative one, circle a higher number. If you did not feel this way, circle a lower number.

21. To what extent did you feel your child's team benefited from your response? If you felt your child's team benefited from your response, regardless of whether you think the response was a positive or negative one, circle a higher number. If you did not feel this way, circle a lower number.

Contact Information:

Jay D. Goldstein
Graduate Assistant
Sports Psychology
Department of Kinesiology
University of Maryland
2238 Health & Human Performance Building
College Park, Maryland 20742
301.509.5425
jgoldst1@umd.edu

Appendix D

Section 3: Sport Parent Behavior Record

Date _____ Time event occurred: _____ am pm Time record was completed: _____ am pm Code (e.g. smi061562) _____

Competition Group & Gender:		Child's Age Division:		Game & Score Status at Time of Incident:	
❑ Recreation Team	❑ Classic Team	❑ Under 6	❑ Under 12	❑ 1st half	❑ 2nd half
❑ Club/Travel Team	❑ Daughter's Team	❑ Under 8	❑ Under 14	❑ Team is winning	❑ Team is losing
❑ Son's Team		❑ Under 10	❑ Under 16	❑ Score is tied	❑ Don't know score

WHAT MADE YOU MAD OR ANGRY?

1. Briefly describe what caused you to become mad (even if it's just a little bit mad) or angry? (write on the back if necessary)

2. Specifically what was it that made you feel this way? (check all that apply)
   - ❑ hostile remarks or gestures
   - ❑ illegal play
   - ❑ opponents were discourteous
   - ❑ own team's play
   - ❑ referee
   - ❑ coach
   - ❑ other (describe) _____

3. To what extent did you perceive this action as being directed at you personally?
   not at all 1 2 3 4 5 6 7 very much

4. To what extent did you perceive this action as being directed towards your child?
   not at all 1 2 3 4 5 6 7 very much

5. How angry did you become?
   not very angry at all 1 2 3 4 5 6 7 extremely angry

6. Approximately how long did your anger last? (check your best estimate)
   - ❑ less than 2 min.
   - ❑ 2-5 minutes
   - ❑ 5-10 minutes
   - ❑ 10-15 minutes
   - ❑ 15-30 minutes
   - ❑ 30 min. - 1 hour
   - ❑ 1-3 hours
   - ❑ most of the day
   - ❑ longer

HOW WERE YOU FEELING BEFORE THE INCIDENT THAT CAUSED YOU TO FEEL THIS WAY?

7. To what extent were you in a rush before the game?
   not at all in a rush 1 2 3 4 5 6 7 I was in a big rush

8. To what extent were you in danger of being late for another function at the point when you became mad or angry?
   I was in no danger of being late 1 2 3 4 5 6 7 I was certain to be late

9. To what extent were you feeling stress before the incident occurred that caused you to become mad or angry?
   no stress 1 2 3 4 5 6 7 extreme stress

10. To what extent were you feeling pressure before the incident occurred that caused you to become mad or angry?
    no pressure 1 2 3 4 5 6 7 extreme pressure

HOW DID YOUR EMOTIONS AFFECT YOUR SPECTATORSHIP?

11. To what extent did you watch the game more passively while you were mad or angry?
    not at all passively 1 2 3 4 5 6 7 much more passively

12. To what extent did you watch the game more intensively while you were mad or angry?
    not at all intensively 1 2 3 4 5 6 7 much more intensively

HOW DID YOU RESPOND TO THE EVENT THAT CAUSED YOU TO BECOME MAD OR ANGRY?

13. What specific responses did you engage in? (check all that apply)
14. Who was the intended target of your response? (please code for each response)

❑ made gesture(s)	__	__	__	SD = son or daughter
❑ yelling	__	__	__	CT = child's teammate
❑ name calling	__	__	__	C = child's coach
❑ muttered comments	__	__	__	T = child's team
❑ looked away in frustration/disgust	__	__	__	P= teammate's parent/fan
				R = referee, official, etc.
❑ stood up from seat	__	__	__	A = administrator
❑ walked towards field	__	__	__	OA = opposing athlete
❑ walked away from field	__	__	__	OC = opposing coach
❑ encouraged others to confront another	__	__	__	OT = opposing team
				OP = opposing parent/fan
❑ physical confrontation	__	__	__	S = self
❑ no action at all	__	__	__	
❑ other (describe) _____				

15. How aggressive would you rate your response?
    not aggressive at all 1 2 3 4 5 6 7 extremely aggressive

16. How passive would you rate your response?
    not passive at all 1 2 3 4 5 6 7 extremely passive

HOW DID YOUR RESPONSE TO THE SITUATION MAKE YOU FEEL?

17. To what extent did your response make you feel like you "got even" with the other person?
    not at all 1 2 3 4 5 6 7 very much

18. To what extent did you feel good about your response?
    not at all 1 2 3 4 5 6 7 very much

19. To what extent did you feel bad about your response?
    not at all 1 2 3 4 5 6 7 very much

20. To what extent did you feel guilty about your response?
    not at all 1 2 3 4 5 6 7 very much

21. To what extent did you feel your child's team benefitted from your response?
    not at all 1 2 3 4 5 6 7 very much

Appendix E

Section 4: Follow-up Questionnaire (Post Game)

Code # _____

(First three letters of mother's maiden name and your six-digit birthdate, e.g., smi061562)

Please answer each of the following questions by circling a number from 1 to 7, which best corresponds to your answer. Please answer honestly.

1. How difficult was it for you to record your sport parent behavior?

   Not at all difficult 1 2 3 4 5 6 7 Very difficult

2. How accurate do you think your sport parent behavior record was?

   Not at all Accurate 1 2 3 4 5 6 7 Very Accurate

3. What is your best estimate of the percentage of occurrences of sport parent anger you experienced that were not recorded?

   _____%

4. How much did keeping the sport parent behavior records decrease your tendency to experience sport parent anger?

   Not at all 1 2 3 4 5 6 7 Very much

5. How much did keeping the sport parent behavior records increase your tendency to experience sport parent anger?

   Not at all 1 2 3 4 5 6 7 Very much

6. Overall, how accurate do you think the sport parent behavior records were for your team?

   Not at all Accurate 1 2 3 4 5 6 7 Very Accurate

Appendix F: Means and Standard Deviations of Initial Dependent and Mediating Variables by Standardized Levels of Descriptive Variables

Variable	Level (N)	**Sport Parent Anger**	**Ego Defensiveness**	**Perceived Pressure**
		0.00 (1.82)	0.00 (1.68)	0.00 (3.05)
Gender	Male (N = 181)	0.08 (1.84)	0.04 (1.74)	0.08 (3.27)
	Female (N = 159)	-0.09 (1.79)	-0.04 (1.60)	-0.08 (2.79)
Age (yrs)	20-29 (N= 1)	-1.30 (na)	-.057 (na)	-1.71 (na)
	30-39 (N = 34)	0.31 (2.36)	0.25 (1.79)	0.44 (3.14)
	40-49 (N = 229)	0.00 (1.80)	0.02 (1.76)	0.13 (3.22)
	50-59 (N = 71)	-0.09 (1.64)	-0.13 (1.37)	-0.54 (2.41)
	60-69 (N = 4)	-0.33 (0.74)	-0.57 (0.00)	-0.64 (2.15)
	> 70 (N = 1)	-1.30 (na)	-0.57 (na)	-1.71 (na)
Marital Status	Single (N = 5)	1.75 (4.55)	1.19 (2.41)	0.60 (4.29)
	Divorced or separated (N = 15)	1.44 (2.59)	1.50 (3.32)	0.65 (3.15)
	Married (N = 320)	-0.09 (1.68)	-0.09 (1.51)	-0.04 (3.03)
Ethnicity	African American (N = 12)	0.23 (2.47)	0.93 (3.38)	0.58 (2.98)
	Asian American (N = 9)	-0.44 (1.19)	-0.49 (0.24)	0.44 (2.09)
	Caucasian (N = 296*)	-0.05 (1.72)	-0.14 (1.40)	-0.22 (2.85)
	Latin American (N = 10)	0.14 (1.61)	1.04 (2.87)	1.93 (3.72)
	Native American (N = 2)	1.70 (0.00)	6.09 (1.35)	9.61 (1.04)
	Other (N = 10)	1.30 (3.60)	1.14 (2.53)	1.80 (5.02)
Education	Some High School (N = 1)	3.23 (na)	2.94 (na)	2.81 (na)
	4 Yrs High School (N = 16)	-1.06 (0.46)	-0.29 (1.10)	-1.50 (0.83)
	Some College (N = 51)	0.18 (2.01)	0.03 (1.72)	-0.23 (2.62)
	4 yrs College (N = 119)	0.28 (2.08)	0.14 (1.73)	0.20 (3/31)
	Grad (Masters) (N = 102)	-0.13 (1.62)	0.04 (1.95)	-0.06 (2.86)
	Grad (PhD or Professional) (N = 47)	-0.34 (1.35)	-0.44 (0.69)	0.27 (3.62)
Household Income	< $25,000 (N = 2)	1.72 (2.12)	1.18 (2.48)	0.55 (3.20)
	$25,000 - 49,999 (N = 7)	1.09 (2.73)	1.48 (2.82)	-0.31 (2.98)
	$50,000 - 74,999 (N = 20)	-0.00 (2.84)	0.41 (2.26)	-0.34 (3.03)
	$75,000 - 99,999 (N = 54)	0.15 (2.01)	0.09 (2.03)	0.68 (4.10)
	$100,000 - 125,000 (N – 51)	0.38 (1.90)	0.08 (1.53)	-0.36 (2.21)
	$125,000 - 149,999 (N = 67)	-0.27 (1.40)	-0.14 (1.62)	-0.11 (3.12)
	> $150,000 (N = 124)	-0.16 (1.63)	-0.18 (1.34)	-0.03 (2.83)
Residence	Anne Arundel County (N = 8)	1.65 (2.88)	-0.57 (0.00)	-1.05 (1.18)
	Baltimore County (N = 3)	-0.28 (0.88)	-0.57 (0.00)	-0.47 (2.16)
	Carroll County (N = 1)	7.09 (na)	6.61 (na)	-1.71 (na)
	Charles County (N = 9)	-0.70 (0.74)	-0.41 (0.49)	0.00 (1.72)
	Frederick County (N = 17)	-0.27 (1.45)	-0.40 (0.49)	-1.05 (1.06)

	Howard County (N = 15)	0.87 (1.54)	0.72 (3.13)	1.30 (3.10)
	Montgomery County (N = 239)	-0.19 (1.66)	-0.09 (1.52)	0.05 (3.13)
	Prince George's County (N = 5)	-0.39 (1.35)	0.57 (2.55)	0.41 (4.73)
	Fairfax County (N= 3)	0.22 (1.52)	0.07 (1.10)	3.16 (4.50)
	Loudoun County (N = 3)	4.25 (1.58)	3.44 (3.82)	3.59 (9.17)
	Prince William County (N = 2)	-0.91 (0.55)	0.53 (1.56)	-1.71 (0.00)
	District of Columbia (N = 5)	-0.55 (1.67)	-0.28 (0.66)	-1.49 (0.50)
	Other (N = 30)	0.60 (2.17)	0.24 (1.81)	-0.37 (2.53)
# of children	1 (N = 46)	0.07 (2.26)	0.18 (2.15)	-0.31 (2.45)
	2 (N = 163)	-0.16 (1.73)	-0.12 (1.40)	-0.17 (3.15)
	3 (N = 90)	0.26 (1.80)	0.06 (1.69)	0.42 (3.23)
	4 (N = 30)	0.27 (1.81)	0.33 (2.34)	0.48 (3.09)
	5 or more (N = 10)	-0.76 (0.72)	-0.35 (0.70)	-0.77 (1.99)
Child gender	Male (N = 173)	0.18 (1.81)	-0.08 (1.38)	0.27 (3.39)
	Female (N = 167)	-0.19 (1.81)	0.09 (1.94)	-0.28 (2.63)
Child age	U-10 (N = 56)	0.34 (2.33)	0.63 (2.48)	0.08 (3.97)
	U-12 (N = 101)	-0.08 (1.84)	0.02 (1.52)	0.24 (3.01)
	U-14 (N = 112)	-0.09 (1.62)	-0.25 (1.40)	-0.37 (2.45)
	U-16 (N = 71)	-0.02 (1.63)	-0.14 (1.37)	0.19 (3.15)
Competition level	Recreation (N = 126)	-0.44 (1.62)	-0.07 (1.70)	-0.17 (2.99)
	Classic (N = 82)	-0.22 (1.30)	-0.31 (1.04)	0.15 (3.14)
	Club / Travel (N = 132)	0.55 (2.12)	0.26 (1.92)	0.08 (3.07)
Child age difference from eldest athlete	-1 years (N = 2)	-0.54 (1.08)	0.16 (1.04)	0.82 (0.40)
	No difference (N = 125)	-0.08 (1.91)	-0.04 (1.92)	0.25 (3.37)
	1 year (N = 95)	0.03 (1.86)	0.01 (1.52)	-0.36 (2.49)
	2 years (N = 73)	0.04 (1.61)	-0.16 (1.34)	0.26 (3.42)
	3 years (N = 25)	0.61 (2.17)	0.59 (2.00)	-0.09 (3.09)
	4 years (N = 12)	-0.35 (1.12)	0.02 (1.42)	-0.92 (1.71)
	5 or more years (N = 2)	-0.91 (0.55)	-0.57 (0.00)	-1.71 (0.00)

Appendix G: Correlations between descriptive and continuous variables

Measure	SPM-A	SPM-C	ED	PP	SPA	SA	AA
Parent Gender[a]	.22**	-.07	-.02	-.03	-.05	.05	.03
Parent Age	-.02	-.15**	-.07	-.09	-.05	-.01	-.17**
Marital Status[b]	-.06	-.07	-.19**	-.05	-.20**	-.02	-.17**
Ethnicity	-.07	.02	.13*	.13*	.11*	-.00	-.02
Education	.07	-.20**	-.06	.07	-.04	-.06	.02
Household Income	.09	-.09	-.15**	-.03	-.12*	-.09	-.05
# of children in family	-.02	.00	.01	.06	.02	.06	.00
Competition Level	.09	.08	.09	.04	.24**	.02	.10
Child Gender[a]	.02	-.02	.05	-.09	-.10	-.04	-.07
Child Age	-.09	.03	-.15**	-.02	-.05	-.07	-.05
Child Age Difference	-.01	-.01	.03	-.06	.04	-.05	-.04

* $p < 0.05$. ** $p < 0.01$.

[a] variable was coded as 1 = male and 2 = female

[b] variable was coded as 1 = single, 2 = divorced or separated, and 3 = married

Appendix H: Subjective Response to Aggression as a Function of Ego-Defensiveness, as mediated by Sport Parent Anger

Variable	Unstandardized Estimate	SE	*t*	*p* value	Standardized Estimate	Squared Part Correlation
Ego-defensiveness	.01	.06	.86	.39	.05	.00
SPA	.21	.06	3.58	<.001	.22	.04

Note: R^2 = .06, N = 339

Appendix I: Aggressive Actions as a Function of Ego-Defensiveness, as mediated by Sport Parent Anger

Variable	Unstandardized Estimate	SE	*t*	*p* value	Standardized Estimate	Squared Part Correlation
Ego-defensiveness	-.01	.03	-2.46	<.05	-.13	.01
SPA	.32	.03	11.59	<.001	.60	.28

Note: R^2 = .30, N = 340

Appendix J: Subjective Response to Aggression as a Function of Perceived Pressure, as mediated by Sport Parent Anger

Variable	Unstandardized Estimate	SE	*t*	*p* value	Standardized Estimate	Squared Part Correlation
Perceived Pressure	.01	.03	1.67	<.01	.09	.01
SPA	.21	.05	3.79	<.001	.21	.04

Note: R^2 = .07, N = 339

Appendix K: Aggressive Actions as a Function of Perceived Pressure, as mediated by Sport Parent Anger

Variable	Unstandardized Estimate	SE	*t*	*p* value	Standardized Estimate	Squared Part Correlation
Perceived Pressure	.00	.02	1.08	.28	.02	.00
SPA	.28	.03	10.82	<.001	.52	.25

Note: R^2 = .29, N = 340

References

Anderson, C. A., & Huesmann, L.R. (2003). Human aggression: A social-cognitive view. In M. A. Hogg & J. Cooper (Eds.), *The Sage Handbook of Social Psychology* (pp. 296-323). Thousand Oaks, CA: Sage.

Anderson, K. E., Lytton, H., & Romney, D. (1986). Mothers' interactions with normal and conduct disordered boys: Who affects whom? *Developmental Psychology*, 22, 604-609.

Arms, R. L., Russell G.W., & Sandilands, M.L. (1979). Effects on the hostility of spectators viewing aggressive sports. *Social Psychology Quarterly*, 42, 275-279.

Bandura, A. (1973). Aggression: A social learning analysis. Englewood Cliffs, NJ: Prentice Hall.

Barron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51, 1173-1182.

Baumeister, R., & Leary, M.R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117, 497-529.

Berkowitz, L. (1964). Aggressive cues in aggressive behavior and hostility catharsis. *Psychological Review 1964*, 71, 104-122.

Berkowitz, L. (1969). Simple views of aggression: An essay review. *American Scientist*, 57, 372-383.

Berkowitz, L. (1970). Experimental investigations of hostility catharsis. *Journal of Consulting Clinical Psychology*, 35, 1-6.

Berkowitz, L. (1993). Aggression: Its causes, consequences, and control. Philadelphia: Temple University Press.

Berkowitz, L., & Alioto, J. T. (1973). The meaning of an observed event as a determinant of its aggressive consequences. *Journal of Personality and Social Psychology*, 8(2), 206-217.

Betancourt, H., & Blair, I. (1992). A cognition (attribution)-emotion model of violence in conflict situations. *Personality and Social Psychology Bulletin*, 18(3), 343-350.

Blanchard, C., & Vallerand, R.J. (1996a). The mediating effects of perceptions of competence, autonomy, and relatedness on the social factors-self-determined situational motivation relationship: Universite de Quebec a Montreal.

Blanchard, C., & Vallerand, R.J. (1996b). The mediating effects of perceptions of competence, autonomy, and relatedness on the social factors-self-determined contextual motivation relationship: Universite de Quebec a Montreal.

Bowlby, J. (1979). The making and breaking of affectional bonds. London: Tavistock.

Briere, N. M., Vallerand, R.J., Blais, M.R., & Pelletier, L.G. (1995). Developpement et validation d'une mesure de motivation intrinseque, extrinseque et d'amotivation en contexte sportif: L"echelle de motivation dans les sports (ems) (on the delelopment and validation of the french form of the sport motivation scale). *International Journal of Sport Psychology*, 26, 465-489.

Brill, A. A. (1929). The why of the fan. North American Review, 228, 429-434.

Caprara, G. V., Perugini, M., & Barbaranelli, C. (1994). Studies of individual differences in aggression. In M. Potegal (Ed.), *The dynamics of aggression: Biological and social processes in dyads and groups*. (pp. 123-153). Hillsdale, NJ: Erlbaum.

Cohn, J. F., Zlochower, A.J., Lein, J., & Kanade, T. (1999). Automated face analysis by feature point tracking has high concurrent validity with manual facs coding. *Psychophysiology*, 36, 35-43.

Deci, E. L. (1975). Intrinsic motivation. New York: Plenum.

Deci, E. L., & Ryan, R.M. (1980). The empirical exploration of intrinsic motivational processes. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 13, pp. 39-80). New York: Academic Press.

Deci, E. L., & Ryan, R.M. (1985a). The general causality orientations scale: Self-determination in personality. *Journal of Research in Personality*, 19, 109-134.

Deci, E. L., & Ryan, R.M. (1985b). Intrinsic motivation and self-determination in human behavior. New York: Plenum Press.

Deci, E. L., & Ryan, R.M. (1987). The support of autonomy and the control of behavior. *Journal of Personality and Social Psychology*, 53, 1024-1037.

Deci, E. L., Connell, J.P., Ryan, R.M. (1989). Self-determination in a work organization. *Journal of Applied Psychology,* 74, 580-590.

Deci, E. L., Nezlek, J., & Sheinman, L. (1981). Characteristics of the rewarder and intrinsic motivation of the rewardee. *Journal of Personality and Social Psychology*, 40, 1-10.

Deci, E. L., & Ryan, R. M. (1991). A motivational approach to self: Integration in personality. Paper presented at the Nebraska symposium on motivation, Lincoln, NE.

Deci, E. L., & Ryan, R. M. (2002). Overview of self-determination theory: An organismic dialectical perspective. In E. L. Deci, & Ryan, R.M. (Ed.), *The handbook of self-determination research* (pp. 3-35). Rochester, NY: University of Rochester Press.

Denham, S. A., Workman, E., Cole, P.M., Weissbrod, C., Kendziora, K.T., & Zahn-Waxler, C. (2000). Prediction of externalizing behavior problems from early to middle childhood: The role of parental socialization and emotion expression. *Development and Psychpathology*, 12, 23-45.

Dollard, J., Doob, L.W., Miller, N.E., Mowrer, O.H., & Sears, R.R. (1939). Frustration and aggression. New Haven, CT: Yale University Press.

Eccles, J. S., Wigfield, A., & Schiefele, U. (1998). Motivation to succeed. In N. Eisenberg (Ed.), *Handbook of child psychology* (5 ed., Vol. 3). New York: John Wiley.

Eccles-Parsons, J., Adler, T.F., Futterman, R., Goff, S.B., Kaczala, C.M., Meece, J.L., & Midglely, C. (1983). Expectancies, values, and academic behaviors. In J. T. Spence (Ed.), *Achievement and achievement motivation* (pp. 75-146). San Francisco: Freeman.

Eckman, P. (1984). Expression and the nature of emotion. In K. R. Scherer & P. Eckman (Eds.), *Approaches to emotion* (pp. 319-343). Hillsdale, NJ: Erlbaum.

Eckman, P., & Friessen, W.V. (1978). Facial action coding system. Palo Alto, CA: Consulting Psychologist Press.

Gehring, J. (2001). More schools calling foul on unsportsmanlike behavior. Education Week on the Web Retrieved 10/17/01

Glaser, B. G., & Strauss, A.L. (1967). The discovery of grounded theory: Strategies for qualitative research. Chicago, IL: Aldine.

Goldstein, J. H., & Arms, R.L. (1971). Effects of observing athletic contests on hostility. *Sociometry*, 34, 83-90.

Grolnick, W. S., & Apostoleris, N.H. (2002a). What makes parents controlling? In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 161-181). Rochester, NY: University of Rochester Press.

Grolnick, W. S., & Ryan, R.M. (1987). Autonomy in children's learning: An experimental and individual difference investigation. *Journal of Personality and Social Psychology*, 52, 890-898.

Grolnick, W. S., & Ryan, R.M. (1989). Parent styles associated with children's self-regulation and competence in school. *Journal of Educational Psychology*, 81, 143-154.

Grolnick, W. S., Gurland, S.T., DeCourcey, W., & Jacob, K. (2002b). Antecedents and consequences of mothers' autonomy support: An experimental investigation. Developmental Psychology, 83(1), 43-155.

Grolnick, W. S., Ryan, R.M., & Deci, E.L. (1991). The inner resources for school achievement: Motivational mediators of children's perceptions of their parents. *Journal of Educational Psychology*, 83, 508-517.

Guay, F., Vallerand, R. J., & Blanchard, C. (2000). On the assessment of situational intrinsic and extrinsic motivation: The situational motivation scale (sims). *Motivation & Emotion*, 24(3), 175-213.

Guttmann, A. (1983). Roman sports violence. In J. H. Goldstein (Ed.), *Sports violence* (pp. 7- 20). New York: Springer-Verlag.

Harrell, W. A. (1981). Verbal aggressiveness in spectators at professional hockey games - the effects of tolerance of violence and amount of exposure to hockey. *Human relations*, 34(8), 643-655.

Harter, S. (1983). Developmental perspectives on the self-system. In E. M. Hetherington (Ed.), *Handbook of child psychology*. (4 ed., Vol. 4, pp. 275-386). New York: Wiley.

Hodgins, H. S., & Knee, C.R. (2002). The integrating self and conscious experience. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 87-100). Rochester, NY: University of Rochester Press.

Hodgins, H. S., Koestner, R, & Duncan, N. (1996). On the compatibility of autonomy and relatedness. *Personality and Social Psychology Bulletin*, 22, 227-237.

Jelsma, B. M. (1982). Adult control behaviors: The interaction between orientation toward control in women and activity level of children: University of Rochester.

Kenney, D. A., Kashy, D.A., & Bolger, N. (1998). Data analysis in social psychology. In D. T. Gilbert, S. T. Fiske & G. Lindzey (Eds.), *The handbook of social psychology* (4 ed., Vol. 2, pp. 233-265). Boston: McGraw-Hill.

Kidman, L., & McKenzie, A. (1996). *Parents' verbal comments at sport events.* Paper presented at the First Childrens' Issues Centre Conference on "Investing in Children", Dunedin, New Zealand.

Kidman, L., McKenzie, A., & McKenzie, B. (1999). The nature and target of parents' comments during youth sport competitions. *Journal of Sport Behavior*, 22(1), 54-69.

Kingsmore, J. M. (1970). Effect of a professional wrestling and a professional basketball contest upon the aggressive tendencies of spectators. In G. S. Kenyon & T. M. Grogg (Eds.), *Contemporary psychology of sport* (pp. 311-315). Chicago, IL: Athletic Institute.

Knee, C. R., & Zuckerman, M. (1996). Causality orientations and the disappearance of self-serving bias. *Journal of Research in Personality*, 30, 76-87.

Knee, C. R., & Zuckerman, M. (1998). A nondefensive personality: Autonomy and control as moderators of defense coping and self-handicapping. *Journal of Research in Personality*, 32, 115-130.

Knee, C. R., Neighbors, C., & Vietor, N. (2001). Self-determination theory as a framework for understanding road rage. *Journal of Applied Social Psychology*, 31(5), 889-904.

Knee, C. R., Patrick, H., Vietor, N.A., Nanayakkara, A. & Neighbors, C. (2002). Self-determination as growth motivation in romantic relationships. *Personality and Social Psychology Bulletin*, 28(5), 609-619.

Leuck, M. R., Krahenbuhl, G.S., & Odenkirk, J.E. (1979). Assessment of spectator aggression at intercollegiate basket-ball contest (mesure de l' agressivite des spectateurs pendant des competitions universitaires de basket-ball). *Review of sport and leisure USA Arabie Saoudite Afghanistan*, 4(1), 40-52.

Maehr, M. L. B., L.A. (1986). The motivation factor: A theory of personal investment. Lexington, MA: Lexington Books.

Mahler, M. (1968). On human symbiosis and the vicissitudes of inviduation. New York: International Universities Press.

Mehrabian, A. (1976). Public places and private spaces: Psychology of work, play, and living environments. New York: Fitzhenry & Whiteside.

Miller, A. (1981). The drama of the gifted child. New York: Basic Books.

Minuchin, S. (1974). Families and family therapy. Cambridge, MA: Harvard University Press.

Murphy, C. M., & O'Leary, K.D. (1989). Psychological aggression predicts physical aggression in early marriage. *Journal of Counseling and Clinical Psychology*, 57, 579-582.

Murphy, S. (1999). The cheers and the tears, a healthy alternative to the dark side of youth sports today. San Francisco, CA: Jossey-Bass Publishers.

Nasoz, F., Alvarez, K., Lisetti, C.L., & Finkelstein, N. (2003). Emotion recognition from physiological signals for presence technologies. *International Journal of Cognition, Technology, and Work*, 6(1).

Neighbors, C., & Vietor, N.A., & Knee, C.R. (2002). A motivational model of driving anger and aggression. *Personality and Social Psychology Bulletin*, 28(3), 324-335.

Pedhazur, E. J. (1997). Multiple regression in behavioral research: Explanation and prediction (3 ed.). Florence, KY: Wadsworth - Thomson Learning.

Plant, R., & Ryan, R.M. (1985). Intrinsic motivation and the effects of self-consciousness, self-awareness, and ego-involvement: An investigation of internally controlling styles. *Journal of Personality*, 53, 435-449.

Reeve, J., & Deci, E.L. (1996). Elements within competitive situations that effect intrinsic motivation. *Personality and Social Psychology Bulletin*, 22, 24-33.

Russell, G. W. (1981). Spectator moods at an aggressive sports event. Journal of Sport Psychology, 3, 217-227.

Russell, G. W. (1983). Psychological issues of sports aggression. In J. H. Goldstein (Ed.), *Sports violence* (pp. 157-181). New York: Springer-Verlag.

Russell, G. W., & Baenninger, R. (1996). Murder most foul: Predictors of an affirmative response to an outrageous question. Aggressive Behavior, 22(3), 175-181.

Ryan, R. M. (1982a). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. *Journal of Personality and Social Psychology*, 43, 450-461.

Ryan, R. M. (1982b). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. *Journal of Personality and Social Psychology*, 43, 450-461.

Ryan, R. M. (1995). Psychological needs and the facilitation of integrative processes. *Journal of Personality*, 63, 397-427.

Ryan, R. M., & Connell, J.P. (1989). Perceived locus of causality and internalization: Examining reasons for acting in two domains. *Journal of Personality and Social Psychology*, 57, 749-761.

Ryan, R. M., Koestner, R., & Deci, E.L. (1991). Ego-involved persistence: When free choice behavior is not intrinisically motivated. *Motivation and Emotion*, 15, 185-205.

Ryan, R. M., Mims, V., & Koestner, R. (1983). Relations of reward contingency and interpersonal context to intrinsic motivation: A review and test of using cognitive evaluation theory. *Journal of Personality and Social Psychology*, 45, 736-750.

Sherif, M., & Cantril, H. (1947). The psychology of ego involvements, social attitudes and identifications. New York: Wiley.

Sloan, L. R. (1979). The function and impact of sport for fans: A review of theory and contemporary research. In J. H. Goldstein (Ed.), *Sports, games, and play*. Hillsdale, NJ: Erlbaum.

Smith, M. D. (1979). Social determinants of violence in hockey: A review. *Canadian Journal of Applied Sport Sciences*, 4, 76-82.

Smoll, F. L., & Smith, R. E. (1999). Sports and your child: A 50-minute guide for parents. Seattle, WA: Warde Publishers.

Sobel, M. E. (1982). *Asymptopic confidence intervals for indirect effects in structural equation models*. Paper presented at the Sociological methodology 1982, Washington, D.C.

Tedeschi, J. T., & Felson, R.B. (1994). *Violence, aggression, and coercive actions*. Washington, D.C.: American Psychological Association.

Turner, E. T. (1970). Effects of viewing college football, basketball, and wrestling on the elicited aggressive responses of male spectators. *Medicine and science in sports and exercise*, 2(2), 100-105.

Vallerand, R. J. (1997). Toward a hierarchical model of intrinsic and extrinsic motivation. In M. P. Zanna (Ed.), *Advances in experimental social psychology* (Vol. 29, pp. 271-360). New York: Academic Press.

Vallerand, R. J., & Ratalle, C.F. (2002). Intrinsic and extrinsic motivation: A hierarchical model. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 35-63). Rochester, NY: University of Rochester Press.

Wann, D. L., Carlson, J.D., & Schrader, M.P. (1999). The impact of team identification on the hostile and instrumental verbal aggression of sport spectators. *Journal of Social Behavior and Personality*, 14(2), 279-287.

Wann, D. L., Melnick, M.J., Russell, G.W., & Pease, D.G. (2001). Sport fans: The psychology and social impact of spectators.

Wann, D. L., Peterson, R. R., Cothran, C., & Dykes, M. (1999). Sport fan aggression and anonymity: The importance of team identification. *Journal of social behavior and personality*, 27(6), 597-602.

Wheeler, L. (1966). Toward a theory of behavioral contagion. *Psychological Review* 1966.

White, R. W. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*, 66, 297-333.

Williams, C. G., & Deci, E.L. (1996). Internationalization of biopsychosocial values of medical students: A test of self-determination theory. *Journal of Personality and Social Psychology*, 70, 767-779.

Williams, C. G., & Deci, E.L. (1998a). The importance of supporting autonomy in medical education. *Annals of Internal Medicine*, 129, 303-308.

Williams, C. G., Rodin, G.C., Ryan, R.M., Grolnick, W.S., & Deci, E.L. (1998b). Autonomous regulation and long-term medication adherence in adult outpatients. *Health Psychology*, 17, 269-276.

Zillman, D. B., J. & Sapolsky, B.S. (1989). Enjoyment from sports spectatorship. In J. H. Goldstein (Ed.), *Sports, games, and play: Social and psychological viewpoints* (2 ed., pp. 241-278). Hillsdale, NJ: Erlbaum.